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New Zealand Official Year-Book, 1896.

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THE

NEW ZEALAND

OFFICIAL YEAR-BOOK

1896

PREPARED UNDER INSTRUCTIONS FROM THE

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BY

E. J. VON DADELSZEN

REGISTRAR-GENERAL

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1896

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PREFACE.

ALTHOUGH the complete Year-book is only now ready for publication, Parts I. and II. of the work, including the official and statistical information, have been in circulation some little time.

These two divisions have been again enlarged so as to give more particulars than before, and are now sufficient to form a volume by themselves.

The compilation of the returns of manufactories and industries generally obtained at the time of the census not being yet quite finished, it is proposed to publish these important tables separately, as soon as possible, with some others on the subject of representation and the last general election, in the form of a supplementary pamphlet.

E. J. VON DADELSZEN.

Registrar-General's Office,
Wellington, 15th December, 1896.

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ADDENDA.

"ELECTORAL ACT AMENDMENT ACT, 1896" (See p. 16).

UNDER the above Act the non-residential or property qualification is abolished, and no person is now entitled to be registered on an electoral roll by virtue of property held. But existing registrations of non-residential qualifications remain valid.

"LAND FOR SETTLEMENTS ACT AMENDMENT ACT, 1896" (See p. 199).

Under this Act landless people obtain preference over others in obtaining land. Applicants for rural land have to prove that they possess the requisite means for stocking, cultivating, and erecting buildings. Provision for deposits is made. Advances for purposes of workmen's homes are provided for, &c.

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NEW ZEALAND OFFICIAL YEAR-BOOK, 1896.

PART I.—INTRODUCTORY; OFFICIAL.

NEW ZEALAND.

THE Colony of New Zealand consists of three main islands, with several groups of smaller islands lying at some distance from the principal group. The main islands, known as the North, the Middle, and Stewart Islands, have a coast-line 4,330 miles in length—North Island, 2,200 miles; Middle Island, 2,000 miles; and Stewart Island, 130 miles. The other islands now included within the colony are the Chatham, Auckland, Campbell, Antipodes, Bounty, and Kermadec Islands. A protectorate over the Cook Islands (Hervey Group) is exercised by the Imperial Government, the Governor of New Zealand acting as responsible adviser.

New Zealand is mountainous in many parts, but has, nevertheless, large plains in both North and Middle Islands. In the North Island, which is highly volcanic, is situated the famous Thermal-Springs District, of which a special account will be given. The Middle Island is remarkable for its lofty mountains, with their magnificent glaciers, and for the deep sounds or fiords on the western coast.

New Zealand is firstly a pastoral, and secondly an agricultural country. Sown grasses are grown almost everywhere, the extent of land laid down being upwards of eight millions of acres. The soil is admirably adapted for receiving these grasses, and, after the bush has been burnt off, is mostly sown over without previous ploughing. In the Middle Island a large area is covered with native grasses, all used for grazing purposes. The large extent of good grazing-land has made the colony a great wool and meat-producing country; and its agricultural capabilities are, speaking generally, very considerable. The abundance of water and the quantity of valuable timber are other natural advantages.

New Zealand is, besides, a mining country. Large deposits of coal are met with, chiefly on the west coast of the Middle Island. Gold, alluvial and in quartz, is found in both islands, the yield having been over fifty-one millions sterling in value to the present time. Full statistical information on this subject is given further on, compiled up to the latest dates.

Discovery and Early Settlement.

The first authentic account of the discovery of New Zealand is that given by Abel Jansen Tasman, the Dutch navigator. He left Batavia on the 14th August, 1642, in the yacht "Heemskirk," accompanied by the "Zeehaen" (or "Sea-hen") fly-boat. After having visited Mauritius and discovered Tasmania, named by him "Van Diemen's Land," in honour of Anthony van Diemen, Governor of the Dutch possessions in the East Indies, he steered eastward, and on the 13th December of the same year sighted the west coast of the Middle Island of New Zealand, described by him as "a high mountainous country, which is at present marked in the charts as New Zealand."

Tasman, under the belief that the land he saw belonged to a great polar continent, and was part of the country discovered some years before by Schouten and Le Maire, to which the name of Staaten Land had been given, gave the same name of Staaten Land to New Zealand; but within about three months afterwards Schouten's "Staaten Land" was found to be merely an inconsiderable island. Upon this discovery being announced, the country that Tasman had called Staaten Land received again the name of "New Zealand," by which it has ever since been known. Tasman sailed along the coast to a bay, where he anchored. To this he gave the name of Murderers (now Massacre) Bay, on account of an unprovoked attack on a boat's crew by the natives, and the massacre of four white men. Thence he steered along the west coast of the North Island, and gave the name of Cape Maria van Diemen to the north-western extremity thereof. After sighting the islands of the Three Kings he finally departed, not having set foot in the country.

There is no record of any visit to New Zealand after Tasman's departure until the time of Captain Cook, who, after leaving the Society Islands, sailed in search of a southern continent then believed to exist. He sighted land on the 6th October, 1769, at Young Nick's Head, and on the 8th of that month cast anchor in Poverty Bay. After having coasted round the North Island and the Middle and Stewart Islands—which last he mistook for part of the Middle Island—he took his departure from Cape Farewell on the 31st March, 1770, for Australia. He visited New Zealand again in 1773, in 1774, and in 1777.

M. de Surville, a French officer in command of the vessel "Saint Jean Baptiste," while on a voyage of discovery, sighted the north-east coast of New Zealand on the 12th December, 1769, and re-

mained for a short time. A visit was soon after paid by another French officer, M. Marion du Fresne, who arrived on the west coast of the North Island of New Zealand on the 24th March, 1772, but was, on the 12th June following, treacherously murdered at the Bay of Islands by the Natives.

In 1793 the "Dædalus," under the command of Lieutenant Hanson, was sent by the Government of New South Wales to New Zealand, and two chiefs were taken thence to Norfolk Island. There was after this an occasional intercourse between the islands of New Zealand and the English settlements in New South Wales.

In 1814 the first missionaries arrived in New Zealand—Messrs. Hall and Kendall—who had been sent as forerunners by Mr. Marsden, chaplain to the New South Wales Government. After a short stay they returned to New South Wales, and on the 19th November of that year again embarked in company with Mr. Marsden, who preached his first sermon in New Zealand on Christmas Day, 1814. He returned to Sydney on the 23rd March, 1815, leaving Messrs. Hall and Kendall, who formed the first mission station at Rangihoua, Bay of Islands, under the auspices of the Church Missionary Society. Six years later, in 1821, the work of evangelization was put on a more durable basis; but the first station of the Wesleyan mission, established by Mr. Leigh and his wife, at the valley of the Kaeo, Whangaroa, was not taken possession of until the 10th June, 1823.

Colonisation.

The first attempt at colonisation was made in 1825 by a company formed in London. An expedition was sent out under the command of Captain Herd, who bought two islands in the Hauraki Gulf and a strip of land at Hokianga. The attempt, however, was a failure, owing to the savage character of the inhabitants. In consequence of frequent visits of whaling-vessels to the Bay of Islands, a settlement grew up at Kororareka—now called Russell—and in 1833 Mr. Busby was appointed British Resident there. A number of Europeans—generally men of low character—gradually settled in different parts of the country, and married Native women.

In 1838 a colonisation company, known as the New Zealand Company, was formed to establish settlement on systematic principles. A preliminary expedition, under the command of Colonel William Wakefield, was despatched from England on the 12th May, 1839, and arrived in New Zealand in the following August. Having purchased land from the Natives, Colonel Wakefield selected the shore of Port Nicholson, in Cook Strait, as the site of the first settlement. On the 22nd January, 1840, the first body of immigrants arrived, and founded the town of Wellington. About the same time—namely, on the 29th January, 1840—Captain Hobson, R.N., arrived at the Bay of Islands, empowered, with the consent of the Natives, to proclaim the sovereignty of the Queen over the islands

of New Zealand, and to assume the government thereof. A compact called "The Treaty of Waitangi," to which in less than six months five hundred and twelve names were affixed, was entered into, whereby all rights and powers of sovereignty were ceded to the Queen, all territorial rights being secured to the chiefs and their tribes. New Zealand was then constituted a dependency of the Colony of New South Wales, but on the 3rd May, 1841, was proclaimed a separate colony. The seat of Government had been previously established at Waitemata (Auckland), round which a settlement was formed.

The New Zealand Company having decided to form another settlement, to which the name of "Nelson" was to be given, despatched a preliminary expedition from England in April, 1841, for the purpose of selecting a site. The spot chosen was the head of Blind Bay, where a settlement was established. About the same time a number of pioneers arrived in Taranaki, despatched thither by the New Plymouth Company, a colonising society which had been formed in England, and had bought 50,000 acres of land from the New Zealand Company.

The next important event in the progress of colonisation was the arrival at Port Chalmers, in March, 1848, of two emigrant ships sent out by the Otago Association for the foundation of a settlement by persons belonging to or in sympathy with the Free Church of Scotland.

In 1849 the "Canterbury Association for founding a Settlement in New Zealand" was incorporated. On the 16th December, 1850, the first emigrant ship despatched by the association arrived at Port Cooper, and the work of opening up the adjoining country was set about in a systematic fashion, the intention of the promoters being to establish a settlement complete in itself, and composed entirely of members of the then United Church of England and Ireland.

The Maoris.

Prior to the colonisation of New Zealand by Europeans, the earliest navigators and explorers found a race of people already inhabiting both islands. Papers written in 1874 by Mr. (afterwards Sir) William Fox, and Sir Donald McLean, then Native Minister, state that at what time the discovery of these islands was made by the Maoris, or from what place they came, are matters of tradition only, and that much has been lost in the obscurity enveloping the history of a people without letters. Nor is there anything on record respecting the origin of the Maori people themselves, beyond the general tradition of the Polynesian race, which seems to show a series of successive migrations from west to east, probably by way of Malaysia to the Pacific. Little more can now be gathered from their traditions than that they were immigrants, and that they probably found inhabitants on the east coast of the

North Island belonging to the same race as themselves—the descendants of a prior migration, whose history is lost. The tradition runs that, generations ago, the Maoris dwelt in a country named Hawaiki, and that one of their chiefs, after a long voyage, fetched the northern island of New Zealand. Returning to his home with a flattering description of the country he had discovered, this chief, it is said, persuaded a number of his kinsfolk and friends, who were much harassed by war, to set out with a fleet of double canoes for the new land. The names of most of the canoes are still remembered, and each tribe agrees in its account of the doings of the people of the principal canoes after their arrival in New Zealand; and from these traditional accounts the descent of the numerous tribes has been traced. Calculations, based on the genealogical staves kept by the *tohungas*, or priests, and on the well-authenticated traditions of the people, indicate that about twenty-one generations have passed since the migration, which may therefore be assumed to have taken place about five hundred and twenty-five years ago. The position of the legendary Hawaiki is unknown, but many places in the South Seas have been thus named in memory of the motherland. The Maoris speak a very pure dialect of the Polynesian language, the common tongue, with more or less variation, in all the Eastern Pacific Islands. When Captain Cook first visited New Zealand he availed himself of the services of a native from Tahiti, whose speech was easily understood by the Maoris. In this way much information respecting the early history of the country and its inhabitants was obtained which could not have otherwise been had.

Boundaries and Area.

The Proclamation of Captain Hobson on the 30th January, 1840, gave as the boundaries of the colony the following degrees of latitude and longitude: On the north, 34° 30′ S. lat.; on the south, 47° 10′ S. lat.; on the east, 179° 0′ E. long.; on the west, 166° 5′ E. long. These limits excluded small portions of the extreme north of the North Island and of the extreme south of Stewart Island.

In April, 1842, by Royal Letters Patent, and again by the Imperial Act 26 and 27 Vict., c. 23 (1863), the boundaries of the colony were altered so as to extend from 33° to 53° of south latitude and from 162° of east longitude to 173° of west longitude. By Proclamation bearing date the 21st July, 1887, the Kermadec Islands, lying between the 29th and 32nd degrees of south latitude and the 177th and 180th degrees of west longitude, were declared to be annexed to and to become part of the Colony of New Zealand.

The following now constitute the Colony of New Zealand:—

1. The island commonly known as the North Island, with its adjacent islets, having an aggregate area of 44,468 square miles, or 28,459,580 acres.

2. The island known as the Middle Island, with adjacent islets, having an aggregate area of 58,525 square miles, or 37,456,080 acres.

3. The South or Stewart Island, and adjacent islets, having an area of 665 square miles, or 425,390 acres.

4. The Chatham Islands, situate 536 miles eastward of Lyttelton in the Middle Island, with an area of 375 square miles, or 239,920 acres.

5. The Auckland Islands, about 200 miles south of Stewart Island, extending about 30 miles from north to south, and nearly 15 from east to west, the area being 210,650 acres.

6. The Campbell Islands, in latitude 52° 33′ south, and longitude 169° 8′ west, about 30 miles in circumference, with an area of 45,440 acres.

7. The Antipodes Islands, about 458 miles in a south-easterly direction from Port Chalmers, in the Middle Island. These are detached rocky islands, and extend over a distance of between 4 and 5 miles from north to south. Area, 12,960 acres.

8. The Bounty Islands, a small group of islets, thirteen in number, lying north of the Antipodes Islands, and about 415 miles in an east-south-easterly direction from Port Chalmers. Area, 3,300 acres.

9. The Kermadec Islands, a group lying about 614 miles to the north-east of Russell, in the Bay of Islands. Raoul or Sunday Island, the largest of these, is about 20 miles in circuit. The next in size is Macaulay Island, about 3 miles round. Area of the group, 8,208 acres.

The total area of the colony is thus about 104,471 square miles, of which the aggregate area of the outlying groups of islands that are practically useless for settlement amounts to about 438 square miles.

A protectorate is exercised by the Imperial Government over the Cook Islands (or Hervey Group) by Proclamation dated the 27th October, 1888. The British Resident* is appointed on the recommendation of the New Zealand Government. He acts as Government Agent for the colony in all matters of trade.

Area of the Australian Colonies.

The areas of the several Australian Colonies, as given by different authorities, vary considerably. The total area of the Australian Continent is given as 2,944,628 square miles, according to a computation made by the late Surveyor-General of Victoria, Mr. J. A. Skene, from a map of Continental Australia compiled and engraved under his direction; but the following areas are taken from the official records of each colony:—

* Frederick J. Moss, Esq., late M.H.R., is now British Resident. His salary is paid by this colony.

	Square Miles.
Queensland	668,497
New South Wales	310,700
Victoria	87,884
South Australia	903,425
Western Australia	1,060,000
Total Continent of Australia	3,030,506
Tasmania	26,215
New Zealand (including the Chatham and other islands)	104,471
Total Australasia	3,161,192

The size of these colonies may be better realised by comparison of their areas with those of European countries. The areas of the following countries — Austria-Hungary, Germany, France, Belgium, Holland, Denmark, Sweden and Norway, Portugal, Spain, Italy (including Sardinia and Sicily), Switzerland, Greece, Roumania, Bulgaria, Servia, Eastern Roumelia, and Turkey in Europe—containing on the whole rather less than 1,600,000 square miles, amount to little more than half the extent of the Australian Continent. If the area of Russia in Europe be added to those of the other countries the total would be about one-seventh larger than the Australian Continent, and about one-twelfth larger than the Australasian Colonies, including New Zealand.

Area of the Colony of New Zealand.

The area of the Colony of New Zealand is about one-seventh less than the area of Great Britain and Ireland, the Middle Island of New Zealand being a little larger than the combined areas of England and Wales.

United Kingdom.	Area in Square Miles.
England and Wales	58,311
Scotland	30,463
Ireland	32,531
Total	121,305
New Zealand.	**Area in Square Miles.**
North Island	44,468
Middle Island	58,525
Stewart Island	665
Chatham Islands	375
Other islands	438
Total	104,471

Physical Features of the North Island.

The North Island extends over a little more than seven degrees of latitude—a distance in a direct line from north to south of 430 geographical or 498 statute miles; but, as the northern portion of the colony, which covers more than three degrees of latitude,

trends to the westward, the distance in a straight line from the North Cape to Cape Palliser, the extreme northerly and southerly points of the island, is about 515 statute miles.

This island is, as a whole, hilly, and, in parts, mountainous in character, but there are large areas of plain or comparatively level country that are, or by clearing may be made, available for agricultural purposes. Of these, the principal are the plains in Hawke's Bay on the East Coast, the Wairarapa Plain in the Wellington District, and a strip of country along the West Coast, about 250 miles in length, extending from a point about thirty miles from the City of Wellington to a little north of New Plymouth. The largest plain in the North Island, Kaingaroa, extends from the shore of Lake Taupo in a north-north-easterly direction to the sea-coast in the Bay of Plenty; but a great part of it is covered with pumice-sand, and is unfitted for tillage or pasture. There are several smaller plains and numerous valleys suitable for agriculture. The level or undulating country in this island fit, or capable of being made fit, for agriculture has been roughly estimated at 13,000,000 acres. This includes lands now covered with standing forest, and swamps that can be drained; also large areas of clay-marl and pumice-covered land. The clay-marl in its natural state is cold and uninviting to the farmer, but under proper drainage and cultivation it can be brought to a high state of productiveness. This kind of land is generally neglected at the present time, as settlers prefer soils more rapidly remunerative and less costly to work. The larger portion of the North Island was originally covered with forest. Although the area of bush-land is still very great, yet year by year the amount is being reduced, chiefly to meet the requirements of settlement, the trees being cut down and burnt, and grass-seed sown on the ashes to create pasture. Hilly as the country is, yet from the nature of the climate it is especially suited for the growth of English grasses, which will flourish wherever there is any soil, however steep the land may be; once laid down in grass very little of the land is too poor to supply food for cattle and sheep. The area of land in the North Island deemed purely pastoral or capable of being made so, while too steep for agricultural purposes, is estimated at 14,200,000 acres. In the centre of the island is a lake, about twenty miles across either way, called Taupo. A large area adjacent to the lake is at present worthless pumice-country. The Waikato River, the largest in the North Island, flows out of its north-eastern corner, and runs thence north-westward until it flows into the ocean a little distance south of the Manukau Harbour. This river is navigable for small steamers for about a hundred miles from its mouth. The Maori King-country, occupied by Natives who for several years isolated themselves from Europeans, lies between Lake Taupo and the western coast. The River Thames, or Waihou, having its sources north of Lake Taupo, flows northward into the Firth of Thames. It is navigable for about fifty miles, but only for small steamers. The other navigable

rivers in this island are the Wanganui and Manawatu, which flow towards the south-west into Cook Strait.

The mountains in the North Island are estimated to occupy about one-tenth of the surface, and do not exceed 4,000ft. in height, with the exception of a few volcanic mountains that are more lofty. Of these, the three following are the most important:—

1. The Tongariro Mountain, situated to the southward of Lake Taupo. It consists of a group of distinct volcanic cones, the lava-streams from which have so overlapped in their descent as to form one compact mountain-mass at the base. The highest of these cones is called Ngauruhoe, and attains an elevation of 7,515ft. The craters of Ngauruhoe, the Red Crater (6,140ft.), and Te Mari (4,990ft.) are the three vents from which the latest discharges of lava have taken place, the most recent having occurred in 1868. These craters are still active, steam and vapour issuing from them with considerable force and noise, the vapours, charged with pungent gases and acids, making it dangerous to approach too near the crater-lips.

2. Ruapehu. This mountain lies to the south of Ngauruhoe and Tongariro. It is a volcanic cone in the solfatara stage, and reaches the height of 9,008ft., being in part considerably above the line of perpetual snow. The most remarkable feature of this mountain is the crater-lake on its summit, which is subject to slight and intermittent eruptions, giving rise to vast quantities of steam. Recently —in March, 1895—such an eruption took place, forming a few hot springs on the margin of the lake, and increasing the heat in the lake itself. This lake lies at the bottom of a funnel-shaped crater, the steep sides of which are mantled with ice and snow. The water occupies a circular basin about 500ft. in diameter, some 300ft. below the enclosing peaks, and is quite inaccessible except by ropes. This lake, and the three craters previously mentioned on Tongariro, are all in one straight line, which, if produced, would pass through the boiling springs at Tokaanu on the southern margin of Lake Taupo, the volcanic country north-east of that lake, and White Island, an active volcano in the Bay of Plenty, situated about twenty-seven miles from the mainland.

3. Mount Egmont. This is an extinct volcanic cone, rising to a height of 8,260ft. The upper part is always covered with snow. This mountain is situated close to New Plymouth, and is surrounded by one of the most fertile districts in New Zealand. Rising from the plains in solitary grandeur, it is an object of extreme beauty, the cone being one of the most perfect in the world.

It is estimated that the area of mountain-tops and barren country at too high an altitude for sheep, and therefore worthless for pastoral purposes, amounts, in the North Island, to 300,000 acres.

Without a doubt the hot springs form the most remarkable feature of the North Island. They are found over a large area, extending from Tongariro, south of Lake Taupo, to Ohaeawai, in the extreme north—a distance of some 300 miles; but the principal seat

of hydrothermal action appears to be in the neighbourhood of Lake Rotorua, about forty miles north-north-east from Lake Taupo. By the destruction of the famed Pink and White Terraces and of Lake Rotomahana during the eruption of Mount Tarawera on the 10th June, 1886, the neighbourhood has been deprived of attractions unique in character and of unrivalled beauty; but the natural features of the country—the numerous lakes, geysers, and hot springs, some of which possess remarkable curative properties in certain complaints—are still very attractive to tourists and invalids. The world-wide importance of conserving this region as a sanatorium for all time has been recognised by the Government, and it is now dedicated by Act of Parliament to that purpose.

Notwithstanding the length of coast-line, good harbours in the North Island are not numerous. Those on the west coast north of New Plymouth are bar-harbours, unsuitable for large vessels. The principal harbours are the Waitemata Harbour, on which Auckland is situated—this is rather a deep estuary than a harbour; several excellent havens in the northern peninsula; and Port Nicholson, on the borders of which Wellington is situated. This is a land-locked harbour, about six miles across, having a comparatively narrow but deep entrance from the ocean. The water is deep nearly throughout.

Cook Strait.

Cook Strait separates the North and Middle Islands. It is some sixteen miles across at its narrowest part, but in the widest about ninety. The strait is invaluable for the purpose of traffic between different parts of the colony.

Physical Features of the Middle Island.

The extreme length of the Middle Island, from Jackson's Head, in Cook Strait, to Puysegur Point, at the extreme south-west, is about 525 statute miles; the greatest distance across at any point is in Otago (the southernmost) District, about 180 miles.

The Middle Island is intersected along almost its entire length by a range of mountains known as the Southern Alps. Some of the summits reach a height of from 10,000ft. to 12,000ft., Mount Cook, the highest peak, rising to 12,349ft.

In the south, in the neighbourhood of the sounds and Lake Te Anau, there are many magnificent peaks, which, though not of great height, are, owing to their latitude, nearly all crowned with perpetual ice and snow. Further north the mountains increase in height—Mount Earnslaw, at Lake Wakatipu; and Mount Aspiring, which has been aptly termed the New Zealand Matterhorn, nearly 10,000ft. in height, at Lake Wanaka. Northward of this again are Mount Cook (or Aorangi), Mount Sefton, and other magnificent peaks.

For beauty and grandeur of scenery the Southern Alps of New Zealand may worthily compare with, while in point of variety they are

said actually to surpass, the Alps of Switzerland. In New Zealand few of the mountains have been scaled; many of the peaks and most of the glaciers are as yet unnamed; and there is still, in parts of the Middle Island, a fine field for exploration and discovery—geographical, geological, and botanical. The wonders of the Southern Alps are only beginning to be known; but the more they are known the more they are appreciated. The snow-line in New Zealand being so much lower than in Switzerland, the scenery, though the mountains are not quite so high, is of surpassing grandeur.

There are extensive glaciers on both sides of the range, those on the west being of exceptional beauty, as, from the greater abruptness of the mountain-slopes on that side, they descend to within about 700ft. of the sea-level, and into the midst of the evergreen forest. The largest glaciers on either side of the range are easily accessible.

The following gives the sizes of some of the glaciers on the eastern slope:—

Name.	Area of Glacier.	Length of Glacier.	Greatest Width.	Average Width.
	Acres.	Miles ch.	Miles ch.	Miles ch.
Tasman	13,664	18 0	2 14	1 15
Murchison	5,800	10 70	1 5	0 66
Godley	5,312	8 0	1 55	1 3
Mueller	3,200	8 0	0 61	0 50
Hooker	2,416	7 25	0 54	0 41

The Alletsch Glacier in Switzerland, according to Ball, in the "Alpine Guide," has an average width of one mile. It is in length and width inferior to the Tasman Glacier.

Numerous sounds or fiords penetrate the south-western coast. They are long, narrow, and deep (the depth of water at the upper part of Milford Sound is 1,270ft., although at the entrance only 130ft.), surrounded by giant mountains clothed with foliage to the snow-line, with waterfalls, glaciers, and snowfields at every turn. Some of the mountains rise almost precipitously from the water's edge to 5,000ft. and 6,000ft. above the sea. Near Milford, the finest of these sounds, is the great Sutherland Waterfall, 1,904ft. high.

The general surface of the northern portion of the Middle Island, comprising the Provincial Districts of Nelson and Marlborough, is mountainous, but the greater part is suitable for grazing purposes. There are some fine valleys and small plains suitable for agriculture, of which the Wairau Valley or Plain is the largest. Deep sounds, extending for many miles, break the coast-line abutting on Cook Strait. The City of Nelson is situated at the head of Blind Bay, which has a depth inwards from Cook Strait of about forty statute miles.

The Provincial District of Canterbury lies to the south of the

Marlborough District, and on the eastern side of the island. Towards the north the land is undulating; then there is a stretch of almost perfectly level country extending towards the south-west 160 miles, after which, on the south, the country is undulating as far as the borders of the Otago District. On the east a block of hill-country rises abruptly from the plain and extends for some miles seaward. This is Banks Peninsula, containing several good harbours, the principal being Port Cooper, on the north, on which is situated Lyttelton, the chief port of the district: the harbour of Akaroa, one of the finest in the colony, is on the southern coast of this peninsula.

The District of Otago is, on the whole, mountainous, but has many fine plains and valleys suitable for tillage. The mountains, except towards the west coast, are generally destitute of timber, and suitable for grazing sheep. There are goldfields of considerable extent in the interior of this district. The inland lakes are also very remarkable features. Lake Wakatipu extends over fifty-four miles in length, but its greatest width is not more than four miles, and its area only 114 square miles. It is 1,070ft. above sea-level, and has a depth varying from 1,170ft. to 1,296ft. Te Anau Lake is somewhat larger, having an area of 132 square miles. These lakes are bounded on the west by broken, mountainous, and wooded country, extending to the ocean.

The chief harbours in Otago are Port Chalmers, at the head of which Dunedin is situated, and the Bluff Harbour, at the extreme south.

The District of Westland, extending along the west coast of the Middle Island, abreast of Canterbury, is more or less auriferous throughout. The western slopes of the central range of mountains are clothed with forest-trees to the snow-line; but on the eastern side timber is scarce, natural grasses covering the ground.

The rivers in the Middle Island are for the most part mountain torrents, fed by glaciers in the principal mountain ranges. When the snow melts they rise in flood, forming, where not confined by rocky walls, beds of considerable width, generally covered by enormous deposits of shingle. The largest river in the colony as regards volume of water is the Clutha. It is 154 miles in length, but is only navigable for boats or small river-steamers for about thirty miles. The Rivers Buller, Grey, and Hokitika, on the West Coast, are navigable for a short distance from their mouths. They form the only ports in the Westland District. In their unimproved state they admitted, owing to the bars at their mouths, none but vessels of small draught; but, in consequence of the importance of the Grey and Buller Rivers as the sole ports available for the coal-export trade, large harbour-works have been undertaken, resulting in the deepening of the beds of these rivers, and giving a depth of from 18ft. to 24ft. of water on the bars.

The area of level or undulating land in the Middle Island available for agriculture is estimated at about 15,000,000 acres. About

13,000,000 are suitable for pastoral purposes only, or may become so when cleared of forest and sown with grass-seed. The area of barren land and mountain-tops is estimated at about 8,000,000 acres.

Foveaux Strait.

Foveaux Strait separates the Middle from Stewart Island. This last island has an area of only 425,390 acres. It is mountainous, and for the most part covered with forest.

The Outlying Islands.

The outlying group of the Chatham Islands, 480 statute miles east-south-east from Wellington, and 536 miles eastward of Lyttelton, consists of two principal islands and several unimportant islets. The largest island contains about 222,490 acres, of which an irregularly-shaped lake or lagoon absorbs 45,960 acres. About one quarter of the surface of the land is covered with forest, the rest with fern or grass. The hills nowhere rise to a great height. Pitt Island is the next in size; the area is 15,330 acres. The greater portion of both islands is used for grazing sheep.

The Kermadec group of islands, four in number, are situated between 29° 10′ and 31° 30′ south latitude, and between 177° 45′ and 179° west longitude. They are named Raoul or Sunday Island, Macaulay Island, Curtis Island, and L'Espérance or French Rock. The principal island, Sunday, is 600 miles distant from Auckland. The islands are volcanic, and in two of them signs of activity are still to be seen. The rainfall is plentiful, but not excessive. The climate is mild and equable, and slightly warmer than the north of New Zealand. The following are the areas of the islands and islets of the group: Sunday Island, 7,200 acres; Herald group of islets, 85 acres; Macaulay Island, 764 acres; Curtis Islands, 128 acres and 19 acres; L'Espérance, 12 acres: total, 8,208 acres. Sunday Island is twenty miles in circumference, roughly triangular in shape, and at the highest point 1,723ft. above the sea-level. It is rugged and broken over a very large extent of its surface, and, except in a few places, covered with forest. The soil everywhere on the island is very rich, being formed by the decomposition of a dark-coloured pumiceous tuff and a black andesitic lava, with which is closely mixed a fine vegetable mould. The great luxuriance and richness of the vegetation bear witness to the excellence of the soil, which is everywhere—except where destroyed by eruptions, and on the steep cliffs—the same rich loam. Want of water is one of the drawbacks. Three of the four lakes on the island are fresh, but so difficult of approach as to be practically useless.

The Auckland Islands are about 290 miles south of Bluff Harbour, their position being given on the Admiralty chart as latitude 50° 31′ 29″ S., and longitude 166° 19′ 12″ E. They have several good harbours. Port Ross, at the north end of the principal island, was described by the eminent French commander, D'Urville, as one of the best harbours of refuge in the known world. At the

southern end of the island there is a through passage extending from the east to the west coast. It has been variously named Adam's Strait and Carnley Harbour, and forms a splendid sheet of water. The largest of the islands is about 27 miles long by about 15 miles broad, and is very mountainous, the highest part being about 2,000ft. above the sea. The west coast is bold and precipitous, but the east coast has several inlets. The wood on the island is, owing to the strong prevailing wind, scrubby in character. The New Zealand Government maintains at this island a dépôt of provisions and clothing for the use of shipwrecked mariners.

Constitution.

British sovereignty was proclaimed over New Zealand in January, 1840, and the country became a dependency of New South Wales until the 3rd May, 1841, when it was made a separate colony. The seat of Government was at Auckland, and the Executive included the Governor, and three gentlemen holding office as Colonial Secretary, Attorney-General, and Colonial Treasurer.

The successors of these gentlemen, appointed in August, 1841, May, 1842, and January, 1844, respectively, continued in office until the establishment of Responsible Government on the 7th May, 1856. Only one of them—Mr. Swainson, the Attorney-General—sat as a member of the first General Assembly, opened on the 27th May, 1854. During the session of that year there were associated with the permanent members of the Executive Council certain members of the General Assembly. These latter held no portfolios.

The Government of the colony was at first vested in the Governor, who was responsible only to the Crown; but in 1852 an Act granting representative institutions to the colony was passed by the Imperial Legislature. Under it the constitution of a General Assembly for the whole colony was provided for, to consist of a Legislative Council, the members of which were to be nominated by the Governor, and of an elective House of Representatives. The first session of the General Assembly was opened on the 27th May, 1854, but the members of the Executive were not responsible to Parliament. The first Ministers under a system of Responsible Government were appointed on the 18th April, 1856. By the Act of 1852 the colony was divided into six provinces, each to be presided over by an elective Superintendent, and to have an elective Provincial Council, empowered to legislate, except on certain specified subjects. The franchise amounted practically to household suffrage. In each case the election was for four years, but a dissolution of the Provincial Council by the Governor could take place at any time, necessitating a fresh election both of the Council and of the Superintendent. The Superintendent was chosen by the whole body of electors of the province; each member of the Provincial Council by the electors of a district. The Provincial Governments, afterwards increased to nine, remained as integral parts of the Constitution of the colony until the 1st November, 1876, when they

were abolished by an Act of the General Assembly, that body having been vested with the power of altering the Constitution Act. On the same day an Act of the General Assembly which subdivided the colony (exclusive of the areas included within municipalities) into counties, and established a system of local county government, came into force.

GOVERNMENT.

The Governor is appointed by the Queen. His salary is £5,000 a year, and is provided by the colony.

Members of the Legislative Council hold their seats under writs of summons from the Governor. Till the year 1891 the appointments were for life; but in September of that year an Act was passed making appointments after that time tenable for seven years only, though Councillors may be reappointed. In either case seats may be vacated by resignation or extended absence. Two members of the Council are aboriginal native chiefs.

The members of the House of Representatives are elected for three years from the time of each general election; but at any time a dissolution of Parliament by the Governor may render a general election necessary. Four of the members are representatives of Native constituencies. An Act was passed in 1887 which provided that, on the dissolution of the then General Assembly, the number of members to be thereafter elected to the House of Representatives should be seventy-four in all, of whom four were to be elected, under the provisions of the Maori Representation Acts, as representatives of Maori electors only. For the purposes of European representation the colony is divided into sixty-two electoral districts, four of which—the Cities of Auckland, Wellington, Christchurch, and Dunedin—return each three members, and all the other electorates one each. Members of the House of Representatives are chosen by the votes of the inhabitants in every electoral district appointed for that purpose.

In 1889 an amendment of the Representation Act was passed, which contained a provision prohibiting any elector from giving his vote in respect of more than one electorate at any election. "The Electoral Act, 1893," has extended to women of both races the right to register as electors, and to vote at the elections for members of the House of Representatives. The qualification for registration is the same for both sexes, and remains, under the Act of 1893, substantially unaltered. No person is entitled to be registered on more than one electoral roll within the colony, whatever the number or nature of the qualifications he or she may possess, or wherever they may be. Women are not qualified to be elected as members of the House of Representatives. The changes in the electoral laws are the subject of special comment further on in this work. Every man registered as an elector, and not coming within the meaning of section 8 of "The Electoral Act, 1893," is qualified to be elected a member of

the House of Representatives for any electoral district. For European representation every adult person, if resident one year in the colony and three months in one electoral district, can be registered as an elector. Freehold property of the value of £25 held for six months preceding the day of registration also entitles a man or woman to register, if not already registered under the residential qualification. Maoris possessing £25 freeholds under Crown title can also register; but, if registered on a European roll, cannot vote for representatives of their own race. For Maori representation every adult Maori resident in any Maori electoral district (of which there are four only in the colony) can vote. Registration is not required in Native districts.

The Seat of Government.

Up to the year 1865 the seat of Government of New Zealand was at Auckland. Several attempts were made by members of Parliament, by motions in the Legislative Council and House of Representatives, to have it removed to some more central place; but it was not until November, 1863, that Mr. Domett (the then ex-Premier) was successful in carrying resolutions in the House of Representatives that steps should be taken for appointing some place in Cook Strait as the permanent seat of Government in the colony. The resolutions adopted were: "(1.) That it has become necessary that the seat of Government in the colony should be transferred to some suitable locality in Cook Strait. (2.) That, in order to promote the accomplishment of this object, it is desirable that the selection of the particular site in Cook Strait should be left to the arbitrament of an impartial tribunal. (3.) That, with this view, a Bill should be introduced to give effect to the above resolutions." On the 25th November an address was presented to the Governor, Sir George Grey, K.C.B., by the Commons of New Zealand, requesting that the Governors of the Colonies of New South Wales, Victoria, and Tasmania, might each be asked to appoint one Commissioner for the purpose of determining the best site in Cook Strait. Accordingly, the Hon. Joseph Docker, M.L.C., New South Wales; the Hon. Sir Francis Murphy, Speaker of the Legislative Council, Victoria; and R. C. Gunn, Esq., Tasmania, were appointed Commissioners.

These gentlemen, having made a personal inspection of all suitable places, arrived at the unanimous decision "that Wellington, in Port Nicholson, was the site upon the shores of Cook Strait which presented the greatest advantages for the administration of the government of the colony."

The seat of Government was, therefore, in accordance with the recommendations of the Commissioners, removed to Wellington in February, 1865.

Public Works.

Nearly all the public works of New Zealand are in the hands of the Government of the colony, and in the early days they simply

kept pace with the spread of settlement. In 1870, however, a great impetus was given to the progress of the whole country by the inauguration of the "Public Works and Immigration Policy," which provided for carrying out works in advance of settlement. Railways, roads, and water-races were constructed, and immigration was conducted on a large scale. As a consequence, the population increased from 267,000 in 1871 to 501,000 in 1881, and to 698,706 at the close of the year 1895, exclusive of Maoris.

SUCCESSIVE GOVERNORS.

SUCCESSION OF GOVERNORS OF NEW ZEALAND, AND THE DATES ON WHICH THEY ASSUMED AND RETIRED FROM THE GOVERNMENT.

Captain William Hobson, R.N., from Jan., 1840, to 10 Sept., 1842.

[British sovereignty was proclaimed by Captain Hobson in January, 1840, and New Zealand became a dependency of the Colony of New South Wales until 3rd May, 1841, at which date it was proclaimed a separate colony. From January, 1840, to May, 1841, Captain Hobson was Lieutenant-Governor of New Zealand under Sir George Gipps, Governor of New South Wales, and from May, 1841, Governor of New Zealand; the seat of Government being at Auckland, where he died in September, 1842. From the time of Governor Hobson's death, in September, 1842, until the arrival of Governor Fitzroy, in December, 1843, the Government was carried on by the Colonial Secretary, Lieutenant Shortland.]

Lieutenant Shortland, Administrator, from 10 Sept., 1842, to 26 Dec., 1843.

Captain Robert Fitzroy, R.N., from 26 Dec., 1843, to 17 Nov., 1845.

Captain Grey (became Sir George Grey, K.C.B., in 1848), from 18 Nov., 1845, to 31 Dec., 1853.

[Captain Grey held the commission as Lieutenant-Governor of the colony until the 1st January, 1848, when he was sworn in as Governor-in-Chief over the Islands of New Zealand, and as Governor of the Province of New Ulster and Governor of the Province of New Munster. After the passing of the New Zealand Constitution Act, Sir George Grey was, on the 13th September, 1852, appointed Governor of the colony, the duties of which office he assumed on the 7th March, 1853. In August, 1847, Mr. E. J. Eyre was appointed Lieutenant-Governor of New Munster: he was sworn in, 28th January, 1848. On 3rd January, 1848, Major-General George Dean Pitt was appointed Lieutenant-Governor of New Ulster: he was sworn in, 14th February, 1848; died, 8th January, 1851; and was succeeded as Lieutenant-Governor by Lieutenant-Colonel Wynyard, appointed 14th April, 1851; sworn in, 26th April, 1851. The duties of the Lieutenant-Governor ceased on the assumption by Sir George Grey of the office of Governor, on the 7th March, 1853.]

Lieutenant-Colonel Robert Henry Wynyard, C.B., Administrator, from 3 Jan., 1854, to 6 Sept., 1855.
Colonel Thomas Gore Browne, C.B., from 6 Sept., 1855, to 2 Oct., 1861.
Sir George Grey, K.C.B., Administrator, from 3 Oct., 1861; Governor, from 4 Dec., 1861, to 5 Feb., 1868.
Sir George Ferguson Bowen, G.C.M.G., from 5 Feb., 1868, to 19 Mar., 1873.
Sir George Alfred Arney, Chief Justice, Administrator, from 21 Mar. to 14 June, 1873.
Sir James Fergusson, Baronet, P.C., from 14 June, 1873, to 3 Dec., 1874.
The Marquis of Normanby, P.C., G.C.M.G., Administrator, from 3 Dec., 1874; Governor, from 9 Jan., 1875, to 21 Feb., 1879.
James Prendergast, Esquire, Chief Justice, Administrator, from 21 Feb. to 27 Mar., 1879.
Sir Hercules George Robert Robinson, G.C.M.G., Administrator, from 27 Mar., 1879; Governor, from 17 April, 1879, to 8 Sept., 1880.
James Prendergast, Esquire, Chief Justice, Administrator, from 9 Sept. to 29 Nov., 1880.
The Honourable Sir Arthur Hamilton Gordon, G.C.M.G., from 29 Nov., 1880, to 23 June, 1882.
Sir James Prendergast, Chief Justice, Administrator, from 24 June, 1882, to 20 Jan., 1883.
Lieutenant-General Sir William Francis Drummond Jervois, G.C.M.G., C.B., from 20 Jan., 1883, to 22 Mar., 1889.
Sir James Prendergast, Chief Justice, Administrator, from 23 Mar. to 2 May, 1889.
The Earl of Onslow, G.C.M.G., from 2 May, 1889, to 24 Feb., 1892.
Sir James Prendergast, Chief Justice, Administrator, from 25 Feb., to 6 June, 1892.
The Earl of Glasgow, G.C.M.G., from 7 June, 1892.

SUPREME COURT JUDGES.

Supreme Court Judges, past and present, with Dates of Appointment, and of Resignation or Death.

Sir W. Martin, appointed Chief Justice, 10 Jan., 1842. Resigned, 12 June, 1857.
H. S. Chapman, appointed, 26 Dec., 1843. Resigned, 30 July, 1850. Reappointed, 23 Mar., 1864. Resigned, 31 Mar., 1875.
S. Stephen, appointed, 30 July, 1850. Appointed Acting Chief Justice, 20 Oct., 1855. Died, 13 Jan., 1858.
Daniel Wakefield, appointed, Oct., 1855. Died, Oct., 1857.

H. B. Gresson, appointed temporarily, 8 Dec., 1857. Permanently, 1 July, 1862. Resigned, 31 Mar., 1875.
Sir G. A. Arney, appointed Chief Justice, 1 Mar., 1858. Resigned, 31 Mar., 1875.
A. J. Johnston, appointed, 2 Nov., 1858. Died, 1 June, 1888.
C. W. Richmond, appointed, 20 Oct., 1862. Died, 3 Aug., 1895.
J. S. Moore, appointed temporarily, 15 May, 1866. Relieved, 30 June, 1868.
C. D. R. Ward, appointed temporarily, 1 Oct., 1868. Relieved, May, 1870. Appointed temporarily, 21 Sept., 1886. Relieved, 12 Feb., 1889.
Sir J. Prendergast, appointed Chief Justice, 1 April, 1875.
T. B. Gillies, appointed, 3 Mar., 1875. Died, 26 July, 1889.
J. S. Williams, appointed, 3 Mar., 1875.
J. E. Denniston, appointed, 11 Feb., 1889.
E. T. Conolly, appointed, 19 Aug., 1889.
Hon. Sir P. A. Buckley, K.C.M.G., appointed, 20 Dec., 1895. Died, 18 May, 1896.
W. B. Edwards, appointed, 11 July, 1896.

EXECUTIVE COUNCIL, 1843–56.

MEMBERS OF THE EXECUTIVE COUNCIL OF THE COLONY OF NEW ZEALAND PREVIOUS TO THE ESTABLISHMENT OF RESPONSIBLE GOVERNMENT (NOT INCLUDING THE OFFICERS COMMANDING THE FORCES).

Willoughby Shortland, Colonial Secretary, from 3 May, 1841, to 31 Dec., 1843; succeeded by Mr. Sinclair.
Francis Fisher, Attorney-General, from 3 May to 10 Aug., 1841; succeeded by Mr. Swainson.
George Cooper, Colonial Treasurer, from 3 May, 1841, to 9 May, 1842; succeeded by Mr. Shepherd.
William Swainson, Attorney-General, from 10 Aug., 1841, to 7 May, 1856.
Alexander Shepherd, Colonial Treasurer, from 9 May, 1842, to 7 May, 1856.
Andrew Sinclair, Colonial Secretary, from 6 Jan., 1844, to 7 May, 1856.

[The three gentlemen last mentioned were nominated by Her Majesty as *ex officio* members of the Executive Council. Two of them, the Colonial Secretary and the Colonial Treasurer, were not members of the General Assembly, opened for the first time 27th May, 1854, but all three remained in office until the establishment of Responsible Government.]

James Edward FitzGerald, M.H.R., without portfolio, from 14 June to 2 Aug., 1854.

Henry Sewell, M.H.R., without portfolio, from 14 June to 2 Aug., 1854.

Frederick Aloysius Weld, M.H.R., without portfolio, from 14 June to 2 Aug., 1854.

Francis Dillon Bell, M.L.C., without portfolio, from 30 June to 11 July, 1854.

Thomas Houghton Bartley, M.L.C., without portfolio, from 14 July to 2 Aug., 1854.

Thomas Spencer Forsaith, M.H.R., without portfolio, from 31 Aug. to 2 Sept., 1854.

Edward Jerningham Wakefield, M.H.R., without portfolio, from 31 Aug. to 2 Sept., 1854.

William Thomas Locke Travers, M.H.R., without portfolio, 31 Aug. to 2 Sept., 1854.

James Macandrew, M.H.R., without portfolio, from 31 Aug. to 2 Sept., 1854.

PARLIAMENTS.

NUMBER OF PARLIAMENTS SINCE THE CONSTITUTION ACT PASSED FOR CONFERRING REPRESENTATIVE INSTITUTIONS UPON THE COLONY OF NEW ZEALAND, WITH THE DATES OF OPENING AND CLOSING OF SESSIONS AND DATES OF DISSOLUTION.

Parliament.	Date of Opening of Sessions.	Date of Prorogation.
First (dissolved 15th September, 1855)	27 May, 1854 ..	9 August, 1854.
	31 August, 1854 ..	16 September, 1854.
	8 August, 1855 ..	15 September, 1855.
Second (dissolved 5th November, 1860)	15 April, 1856 ..	16 August, 1856.
	(No session in 1857)	
	10 April, 1858 ..	21 August, 1858.
	(No session in 1859)	
	30 July, 1860 ..	5 November, 1860.
Third (dissolved 27th January, 1866)	3 June, 1861 ..	7 September, 1861.
	7 July, 1862 ..	15 September, 1862.
	19 October, 1863 ..	14 December, 1863.
	24 November, 1864	13 December, 1864.
	26 July, 1865 ..	30 October, 1865.

PARLIAMENTS—*continued.*

Parliament.	Date of Opening of Sessions.	Date of Prorogatio
Fourth (dissolved 30th December, 1870)	30 June, 1866 ..	8 October, 1866.
	9 July, 1867 ..	10 October, 1867.
	9 July, 1868 ..	20 October, 1868.
	1 June, 1869 ..	3 September, 1869.
	14 June, 1870 ..	13 September, 1870.
Fifth (dissolved 6th December, 1875)	14 August, 1871 ..	16 November, 1871.
	16 July, 1872 ..	25 October, 1872.
	15 July, 1873 ..	3 October, 1873.
	3 July, 1874 ..	31 August, 1874.
	20 July, 1875 ..	21 October, 1875.
Sixth (dissolved 15th August, 1879)	15 June, 1876 ..	31 October, 1876.
	19 July, 1877 ..	10 December, 1877.
	26 July, 1878 ..	2 November, 1878.
	11 July, 1879 ..	11 August, 1879.
Seventh (dissolved 8th November, 1881)	24 September, 1879	19 December, 1879.
	28 May, 1880 ..	1 September, 1880.
	9 June, 1881 ..	24 September, 1881.
Eighth (dissolved 27th June, 1884)	18 May, 1882 ..	15 September, 1882.
	14 June, 1883 ..	8 September, 1883.
	5 June, 1884 ..	24 June, 1884.
Ninth (dissolved 15th July, 1887) ..	7 August, 1884 ..	10 November, 1884.
	11 June, 1885 ..	22 September, 1885.
	13 May, 1886 ..	18 August, 1886.
	26 April, 1887 ..	10 July, 1887.
Tenth (dissolved 3rd October, 1890)	6 October, 1887 ..	23 December, 1887.
	10 May, 1888 ..	31 August, 1888.
	20 June, 1889 ..	19 September, 1889.
	19 June, 1890 ..	18 September, 1890.
Eleventh (dissolved 8th November, 1893)	23 January, 1891 ..	31 January, 1891.
	11 June, 1891 ..	5 September, 1891.
	23 June, 1892 ..	12 October, 1892.
	22 June, 1893 ..	7 October, 1893.
Twelfth (dissolved 1896)	21 June, 1894 ..	24 October, 1894.
	20 June, 1895 ..	2 November, 1895.
	11 June, 1896 ..	

SUCCESSIVE MINISTRIES

SINCE THE ESTABLISHMENT OF RESPONSIBLE GOVERNMENT IN NEW ZEALAND IN 1856.

Name of Ministry.	Assumed Office.	Retired.
1. Bell-Sewell	7 May, 1856	20 May, 1856.
2. Fox	20 May, 1856	2 June, 1856.
3. Stafford	2 June, 1856	12 July, 1861.
4. Fox	12 July, 1861	6 August, 1862.
5. Domett	6 August, 1862	30 October, 1863.
6. Whitaker-Fox	30 October, 1863	24 November, 1864.
7. Weld	24 November, 1864	16 October, 1865.
8. Stafford	16 October, 1865	28 June, 1869.
9. Fox	28 June, 1869	10 September, 1872.
10. Stafford	10 September, 1872	11 October, 1872.
11. Waterhouse	11 October, 1872	3 March, 1873.
12. Fox	3 March, 1873	8 April, 1873.
13. Vogel	8 April, 1873	6 July, 1875.
14. Pollen	6 July, 1875	15 February, 1876.
15. Vogel	15 February, 1876	1 September, 1876.
16. Atkinson	1 September, 1876	13 September, 1876.
17. Atkinson (reconstituted)	13 September, 1876	13 October, 1877.
18. Grey	15 October, 1877	8 October, 1879.
19. Hall	8 October, 1879	21 April, 1882.
20. Whitaker	21 April, 1882	25 September, 1883.
21. Atkinson	25 September, 1883	16 August, 1884.
22. Stout-Vogel	16 August, 1884	28 August, 1884.
23. Atkinson	28 August, 1884	3 September, 1884.
24. Stout-Vogel	3 September, 1884	8 October, 1887.
25. Atkinson	8 October, 1887	24 January, 1891.
26. Ballance	24 January, 1891	1 May, 1893.*
27. Seddon	1 May, 1893.	

* Owing to the death of the Premier, the Hon. J. Ballance, on 27th April, 1893.

PREMIERS OF SUCCESSIVE MINISTRIES.

Name of Premier.	Name of Premier.
Henry Sewell.	Sir Julius Vogel, K.C.M.G.
William Fox.	Harry Albert Atkinson.
Edward William Stafford.	Harry Albert Atkinson (Ministry reconstituted).
William Fox.	
Alfred Domett.	Sir George Grey, K.C.B.
Frederick Whitaker.	Hon. John Hall.
Frederick Aloysius Weld.	Frederick Whitaker, M.L.C.
Edward William Stafford.	Harry Albert Atkinson.
William Fox.	Robert Stout.
Hon. Edward William Stafford.	Harry Albert Atkinson.
George Marsden Waterhouse.	Sir Robert Stout, K.C.M.G.
Hon. William Fox.	Sir Harry Albert Atkinson, K.C.M.G.
Hon. Julius Vogel, C.M.G.	John Ballance.
Daniel Pollen, M.L.C.	Richard John Seddon.

SPEAKERS OF THE LEGISLATIVE COUNCIL,

WITH DATES OF THEIR APPOINTMENT AND DATES OF RETIREMENT OR DEATH.

Name of Speaker.	Date of Appointment.	Date of Retirement or Death.
Hon. William Swainson	16 May, 1854 ..	8 August, 1855.
Hon. Frederick Whitaker	8 August, 1855 ..	12 May, 1856.
Hon. Thomas Houghton Bartley ..	12 May, 1856 ..	1 July, 1868.
Hon. Sir John Larkins Cheese Richardson, Kt.	1 July, 1868 ..	14 June, 1879.
Hon. Sir William Fitzherbert, K.C.M.G.	14 June, 1879 ..	23 January, 1891.
Hon. Sir Harry Albert Atkinson, K.C.M.G.	23 January, 1891	28 June, 1892.
Hon. Henry John Miller	8 July, 1892.	

SPEAKERS OF THE HOUSE OF REPRESENTATIVES,

WITH DATES OF THEIR ELECTION AND DATES OF RETIREMENT.

Name of Speaker.	Date of Election.	Date of Retirement.
Sir Charles Clifford, Bart.	26 May, 1854	
	15 April, 1856 ..	3 June, 1861.
Sir David Monro, Kt. Bach. ..	3 June, 1861	
	30 June, 1866 ..	13 Sept., 1870.
Sir Francis Dillon Bell, K.C.M.G., C.B.	14 August, 1871 ..	21 October, 1875.
Sir William Fitzherbert, K.C.M.G. ..	15 June, 1876 ..	13 June, 1879.
Sir George Maurice O'Rorke, Kt. Bach.	11 July, 1879	
	24 September, 1879	
	18 May, 1882	
	7 August, 1884	
	6 October, 1887	3 October, 1890.
Hon. Major William Jukes Steward ..	23 January, 1891	8 November, 1893.
Hon. Sir George Maurice O'Rorke, Kt. Bach.	21 June, 1894.	

FOREIGN CONSULS.

CONSULS OF FOREIGN COUNTRIES RESIDING IN, OR WITH JURISDICTION OVER, NEW ZEALAND, AUGUST, 1896.

Country represented.	Office held.	Name.	Place of Residence.
Argentine Republic	Consul ..	John Lee Lee-Smith ..	Dunedin.
Austria-Hungary	Consul ..	Julius Mergell	Sydney.
Belgium ..	Consul-General	Gustave Beckx	Melbourne.
" ..	Consul ..	Charles John Johnston ..	Wellington.
" ..	" ..	Alexander Beck	Christchurch.
" ..	Acting Consul..	Valdemar Johansen ..	Auckland.

FOREIGN CONSULS—*continued.*

Country represented.	Office held.	Name.	Place of Residence.
Chili	Consul-General	William Henry Eldred ..	Sydney.
"	Consular Agent	Edmund Quick	Dunedin.
Denmark ..	Consul (for North Island)	Edward Valdemar Johansen	Auckland.
" ..	Consul (for South Island)	Emil Christian Skog ..	Christchurch
" ..	Vice Consul ..	Francis Henry Dillon Bell ..	Wellington.
" ..	" ..	Edmund Quick	Dunedin.
France ..	Consul (for New Zealand)	Viscount Alexandre Louis Ferdinand De Jouffroy D'Abbans	Wellington.
" ..	Consular Agent	Ambrose Millar	Auckland.
" ..	"	Percival Clay Neill ..	Dunedin.
" ..	"	Hon. Edmund William Parker	Christchurch.
German Empire	Consul-General	A. Pelldram	Sydney.
"	Consul ..	Bendix Hallenstein ..	Dunedin.
"	" ..	Philip Kippenberger ..	Christchurch.
"	" ..	Friedrich August Krull ..	Wanganui.
"	" ..	Carl Seegner	Auckland.
"	Vice-Consul ..	Augustus Friedrich Castendyk	Wellington.
Hawaiian Islands	Consul-General (for Australasia)	W. E. Dixon	Sydney.
"	Consul ..	James Macfarlane ..	Auckland.
"	" ..	William Godfrey Neill ..	Dunedin.
Italy	Consul-General (in Australia)	Commendatore P. Corte ..	Melbourne.
"	Consular Agent	(Vacant)	Christchurch.
"	"	George Fisher	Wellington.
"	"	Edward Bowes Cargill ..	Dunedin.
"	"	Geraldo Guiseppe Perotti ..	Greymouth.
"	"	R. Rose (acting)	Auckland.
Netherlands ..	Consul-General	Dr. Laon Adrian de Vicq ..	Melbourne.
" ..	Consul ..	Charles John Johnston ..	Wellington.
" ..	Vice-Consul ..	Edward Bowes Cargill ..	Dunedin.
Nicaragua ..	Consul-General (for Australasia)	J. H. Amora	Sydney.
Portugal ..	Consul ..	John Duncan	Wellington.
" ..	Vice-Consul ..	Henry Rees George ..	Auckland.
" ..	" ..	Edmund Quick	Dunedin.
Russia ..	Consul ..	Baron d'Ungern-Sternberg ..	Melbourne.
Spain	Vice-Consul ..	Don Francisco Arenas Y. Bonet	Christchurch
Sweden and Norway	Consul ..	Edward Pearce	Wellington.
"	Vice-Consul ..	Edward Valdemar Johansen	Auckland.
"	" ..	Frank Graham	Christchurch.
United States ..	Consul-General	Daniel W. Maratta ..	Melbourne.
" ..	Consul (for New Zealand)	John Darcy Connolly ..	Auckland.
" ..	Vice-Consul ..	Leonard A. Bachelder ..	Auckland.
" ..	Consular Agent	Robert Pitcaithley ..	Christchurch.
" ..	"	Robert Wyles	Mongonui.
" ..	"	Thomas Cahill, M.D. ..	Wellington.
" ..	"	William Godfrey Neill ..	Dunedin.

AGENTS-GENERAL IN LONDON.

(With their Addresses.)

NEW ZEALAND.

The Hon. W. P. Reeves, Westminster Chambers, 13, Victoria Street, S.W. Secretary—Walter Kennaway, C.M.G.

AUSTRALIA.

Queensland.—The Hon. Sir James F. Garrick, K.C.M.G., Westminster Chambers, 1, Victoria Street, S.W. Secretary—Charles Shortt Dicken, C.M.G.

New South Wales.—The Hon. Sir Saul Samuel, K.C.M.G., C.B., Westminster Chambers, 9, Victoria Street, S.W. Secretary—S. Yardley, C.M.G.

Victoria.—The Hon. Duncan Gillies, 15, Victoria Street, S.W. Secretary—J. B. Rodgerson.

South Australia.—The Hon. Thomas Playford, Victoria Chambers, 15, Victoria Street, S.W. Secretary—T. F. Wickstead.

Western Australia.—The Hon. Sir Malcolm Fraser, K.C.M.G., 15, Victoria Street, Westminster, S.W. Secretary—Reginald Hare.

Tasmania.—The Hon. Sir Robert G. W. Herbert, G.C.B. (acting), Westminster Chambers, 5, Victoria Street, S.W. Secretary—

THE COLONIAL OFFICE.

JULY, 1896.

(DOWNING STREET, S.W., LONDON), WITH DATES OF APPOINTMENT.

Principal Secretary of State for the Colonies—The Right Hon. Joseph Chamberlain, M.P., 28th June, 1895.

Under-Secretaries: Parliamentary—The Right Hon. the Earl of Selborne, 28th June, 1895. Permanent—The Hon. Sir Robert Henry Meade, K.C.B., 1st February, 1892.

Assistant Under-Secretaries—John Bramston, D.C.L., C.B., 30th June, 1876; Edward Wingfield, B.C.L., C.B., 19th July, 1878; Edward Fairfield, C.B., C.M.G., 1st February, 1892.

CROWN AGENTS FOR THE COLONIES.

DOWNING STREET, S.W. CITY OFFICE: 1, TOKENHOUSE BUILDINGS, E.C., LONDON.

Crown Agents—Sir Montagu Frederick Ommanney, K.C.M.G., Ernest Edward Blake, and Major M. A. Cameron, R.E.

HONOURS HELD BY COLONISTS.

Bell, Hon. Sir Francis Dillon, Knt. Bach., 1873; K.C.M.G., 1881; C.B., 1886.
Buller, Sir Walter Lawry, F.R.S., C.M.G., 1875; K.C.M.G., 1886.
Grace, Hon. Morgan Stanislaus, C.M.G., 1890.
Grey, Right Hon. Sir George, K.C.B., 1848; P.C., 1894.
Hall, Hon. Sir John, K.C.M.G., 1882.
Hector, Sir James, F.R.S., C.M.G., 1875; K.C.M.G., 1887.
Larnach, Hon. William James Mudie, C.M.G., 1879.
O'Rorke, Hon. Sir George Maurice, Knt. Bach., 1880.
Perceval, Sir Westby Brook, K.C.M.G, 1894.
Prendergast, Sir James, Knt. Bach., 1881.
Richardson, Hon. Edward, C.M.G., 1879.
Roberts, John, Esq., C.M.G., 1891.
Stafford, Hon. Sir Edward William, K.C.M.G., 1879; G.C.M.G., 1887.
Stout, Hon. Sir Robert, K.C.M.G., 1886.
Vogel, Hon. Sir Julius, C.M.G., 1872; K.C.M.G., 1875.
Whitmore, Hon. Colonel Sir George Stoddart, C.M.G., 1869; K.C.M.G., 1882.

PERSONS ALLOWED TO RETAIN THE TITLE OF "HONOURABLE" WITHIN HER MAJESTY'S DOMINIONS.

By despatch from the Secretary of State for the Colonies, dated Downing Street, 15th June, 1893, His Excellency the Governor was apprised that the title of "Honourable," appertaining to Members of the Executive and Legislative Councils in colonies possessing Responsible Government, whether confined to duration of office or continued for life, is approved by Her Majesty for use and recognition throughout her dominions, either during office or for life, as the case may be.

By further despatch of 10th March, 1894, the Secretary of State announces that he is prepared in future to submit for the approval of the Queen the recommendation of the Governor of any colony having Responsible Government that the President of the Legislative Council or the Speaker of the Legislative Assembly may, on quitting office after three years' service in their respective offices, be permitted to retain the title of "Honourable." This title has since been conferred on Sir F. D. Bell, Sir G. M. O'Rorke, and Major William Jukes Steward.

Besides the Members of the Executive and Legislative Councils, the following ex-Ministers whose names do not appear in the list given above are allowed, as such, to retain the title of "Honourable": Bryce, John, 1884; Dick, Thomas, 1884; Fergus, Thomas, 1891; Gisborne, William, 1873; Haultain, Colonel T. M., 1870; Hislop, Thomas W., 1891; Johnston, Walter W., 1884; Mitchelson, Edwin, 1891; Oliver, Richard, 1884; Reeves, William P., 1896; Reynolds, William H., 1876; Richardson, George F., 1891; Rolleston, William, 1884; Tole, Joseph A., 1888.

GOVERNOR OF NEW ZEALAND.

GLASGOW, His Excellency the Right Honourable David, Earl of, G.C.M.G., a Captain of the Royal Navy, served in the White Sea during the Russian war, and in the Chinese war of 1857, and retired in 1878; born, 1833; married, in 1873, Dorothea Thomasina, daughter of Sir Edward Hunter-Blair; appointed February 24, and assumed office June 7, 1892, as Governor and Commander-in-Chief in and over Her Majesty's Colony of New Zealand and its Dependencies. Salary, £5,000. Residences: Government House, Wellington; and Government House, Auckland.

Private Secretary and Aide-de-Camp—Edward Hay Mackenzie Elliot (Major, South Lancashire Regiment).

Aide-de-Camp—R. W. P. Clarke-Campbell-Preston (Captain, 3rd Battalion Black Watch Royal Highlanders). Extra Aide-de-Camp—P. H. Guy Feilden (Sub-Lieutenant 7th Battalion King's Royal Rifle Corps).

ADMINISTRATOR OF THE GOVERNMENT.—A dormant commission empowers the Chief Justice of the Colony for the time being to administer the Government in case of the death, incapacity, removal, or departure of the Governor.

EXECUTIVE COUNCIL.

AUGUST, 1896.

His Excellency the GOVERNOR presides.

Hon. R. J. Seddon, Premier, Colonial Treasurer, Commissioner of Trade and Customs, Postmaster-General, Electric Telegraph Commissioner, Minister of Labour, and Minister of Native Affairs.

Hon. J. McKenzie, Minister of Lands, Minister of Agriculture, Commissioner of Forests, and Minister in Charge of Advances to Settlers Office.

Hon. A. J. Cadman, Minister for Railways and Minister of Mines.

Hon. J. Carroll, Commissioner of Stamp Duties, Acting Colonial Secretary, and Member of Executive Council representing the Native Race.

Hon. W. C. Walker, Minister of Immigration, Minister of Education, and Minister in Charge of Hospitals and Charitable Aid.

Hon. W. Hall-Jones, Minister for Public Works, Minister of Marine, and Minister in Charge of Printing Office.

Hon. T. Thompson, Minister of Justice, Minister of Defence, and Minister of Industries and Commerce.

Clerk of Executive Council—Alexander James Willis.

THE GENERAL ASSEMBLY.

LEGISLATIVE COUNCIL.

The number of members at present constituting the Legislative Council is forty-four. The number cannot be less than ten, but is

otherwise unlimited. Prior to 1891 Councillors summoned by the Governor held their appointments for life; but on the 17th of September of that year an Act was passed making future appointments to the Council tenable for seven years only, to be reckoned from the date of the writ of summons of the Councillor's appointment, though every such Councillor may be reappointed. The qualifications are that the person to be appointed be of the full age of twenty-one years, and a subject of Her Majesty, either natural-born or naturalised by or under any Act of the Imperial Parliament or by or under any Act of the General Assembly of New Zealand. All contractors to the public service to an amount of over £50 and Civil servants of the colony are ineligible as Councillors. Payment of Councillors is at the rate of £150 a year, payable monthly. Actual travelling-expenses to and from Wellington are also allowed. A deduction of £1 5s. per sitting day is made in case of an absence, except through illness or other unavoidable cause, exceeding five sitting days in any one session. Under "The Legislative Council Act, 1891," a seat is vacated by any member of the Council—(1), If he takes any oath or makes any declaration or acknowledgment of allegiance, obedience, or adherence to any foreign Prince or Power; or (2), if he does, or concurs in, or adopts any act whereby he may become a subject or citizen of any foreign State or Power, or is entitled to the rights, privileges, or immunities of a subject of any foreign State or Power; or (3), if he is a bankrupt, or compounds with his creditors under any Act for the time being in force; or (4), if he is a public defaulter, or is attainted of treason, or is convicted of felony or any infamous crime; or (5), if he resigns his seat by writing under his hand addressed to and accepted by the Governor; or (6), if for more than one whole session of the General Assembly he fails, without permission of the Governor notified to the Council, to give his attendance in the Council. By the Standing Orders of the Council, the presence of one-fourth of the members of the Council, exclusive of those who have leave of absence, is necessary to constitute a meeting for the exercise of its powers. This rule, however, may be altered from time to time by the Council. The ordinary sitting-days are Tuesdays, Wednesdays, Thursdays, and Fridays, from 2.30 p.m. to 5 p.m., resuming again at 7.30 when necessary.

Roll of Members of the Honourable the Legislative Council of New Zealand, August, 1896.

Speaker—The Hon. Henry John Miller.

Chairman of Committees—The Hon. William Douglas Hall Baillie.

Name.	Provincial District.	Date of Appointment.
Acland, the Hon. John Barton Arundel ..	Canterbury ..	8 July, 1865.
Arkwright, the Hon. Francis	Wellington ..	13 December, 1895.
Baillie, the Hon. William Douglas Hall ..	Marlborough	8 March, 1861.

ROLL OF MEMBERS OF THE LEGISLATIVE COUNCIL—*continued.*

Name.	Provincial District.	Date of Appointment.
Barnicoat, the Hon. John Wallis ..	Nelson ..	14 May, 1883.
Bolt, the Hon. William Mouat	Otago ..	15 October, 1892.
Bonar, the Hon. James Alexander ..	Westland ..	27 June, 1868.
Bowen, the Hon. Charles Christopher ..	Canterbury ..	23 January, 1891.
Feldwick, the Hon. Henry	Otago ..	15 October, 1892.
Grace, the Hon. Morgan Stanislaus, C.M.G.	Wellington ..	13 May, 1870.
Holmes, the Hon. Mathew	Otago ..	19 June, 1866.
Jenkinson, the Hon. John Edward ..	Canterbury ..	6 June, 1893.
Jennings, the Hon. William Thomas ..	Auckland ..	15 October, 1892.
Johnston, the Hon. Charles John ..	Wellington ..	23 January, 1891.
Jones, the Hon. George	Otago ..	13 December, 1895.
Kelly, the Hon. Thomas	Taranaki ..	15 October, 1892.
Kenny, the Hon. Courtney William Aylmer Thomas	Marlborough	15 May, 1885.
Kerr, the Hon. James	Westland ..	15 October, 1892.
MacGregor, the Hon. John	Otago ..	15 October, 1892.
McCullough, the Hon. William.. ..	Auckland ..	15 October, 1892.
McLean, the Hon. George	Otago ..	19 December, 1881.
Miller, the Hon. Henry John (Speaker) ..	Otago ..	8 July, 1865.
Montgomery, the Hon. William.. ..	Canterbury ..	15 October, 1892.
Morris, the Hon. George Bentham ..	Auckland ..	15 May, 1885.
Oliver, the Hon. Richard	Otago ..	10 November, 1881.
Ormond, the Hon. John Davies ..	Hawke's Bay	23 January, 1891.
Peacock, the Hon. John Thomas ..	Canterbury ..	3 June, 1873.
Reeves, the Hon. Richard Harman Jeffares	Nelson ..	13 December, 1895.
Reynolds, the Hon. William Hunter ..	Otago ..	6 May, 1878.
Richardson, the Hon. Edward, C.M.G. ..	Wellington ..	15 October, 1892.
Rigg, the Hon. John	Wellington ..	6 June, 1893.
Scotland, the Hon. Henry	Taranaki ..	24 February, 1868.
Shephard, the Hon. Joseph	Nelson ..	15 May, 1885.
Shrimski, the Hon. Samuel Edward ..	Otago ..	15 May, 1885.
Smith, the Hon. William Cowper ..	Hawke's Bay	13 December, 1895.
Stevens, the Hon. Edward Cephas John..	Canterbury ..	7 March, 1882.
Stewart, the Hon. William Downie ..	Otago ..	23 January, 1891.
Swanson, the Hon. William	Auckland ..	15 May, 1885.
Taiaroa, the Hon. Hori Kerei	Otago ..	15 May, 1885.
Wahawaha, the Hon. Major Ropata, N.Z.C.	Auckland ..	10 May, 1887.
Walker, the Hon. Lancelot	Canterbury ..	15 May, 1885.
Walker, the Hon. William Campbell ..	Canterbury ..	15 October, 1892.
Whitmore, the Hon. Sir George Stoddart, K.C.M.G.	Hawke's Bay	31 August, 1863.
Whyte, the Hon. John Blair	Auckland ..	23 January, 1891.
Williams, the Hon. Henry	Auckland ..	7 March, 1832.

Clerk of Parliaments, Clerk of the Legislative Council, and Examiner of Standing Orders upon Private Bills—Leonard Stowe.

Clerk-Assistant—Arthur Thomas Bothamley.

Second Clerk-Assistant—George Moore.

Interpreter—Henry S. Hadfield.

HOUSE OF REPRESENTATIVES.

The number of members constituting the House of Representatives is seventy-four—seventy Europeans and four Maoris. This

number was fixed by the Act of 1887, which came for the first time into practical operation at the general election of 1890. Previously (from 1881) the House consisted of ninety-five members—ninety-one Europeans and four Maoris. The North Island returns thirty-one European members, and the Middle Island thirty-nine. The Cities of Auckland, Wellington, Christchurch, and Dunedin return each three members, and all other electoral districts one each. The elections are triennial, except in the case of a dissolution by the Governor. Every registered elector, being of the male sex, and free from any of the disqualifications mentioned in section 8 of "The Electoral Act, 1893," is eligible for membership. All contractors to the public service of New Zealand to whom any public money above the sum of £50 is payable, directly or indirectly, in any one financial year, as well as the Civil servants of the colony, are incapable of being elected as or of sitting or voting as members. The payment made to members of the House of Representatives is £20 per month, amounting to £240 per annum. £2 for every sitting-day exceeding five is deducted on account of absence during session not due to sickness or other unavoidable cause. Travelling-expenses to and from Wellington are also allowed. This scale of payment came into force on the 1st January, 1893, under the provisions of "The Payment of Members Act, 1892." Twenty members, inclusive of the Speaker, constitute a quorum. Unless otherwise ordered, the sitting-days of the House are Tuesdays, Wednesdays, Thursdays, and Fridays, from 2.30 to 5.30, resuming at 7.30 p.m. Order of admission to the Speaker's Gallery is by ticket obtained from the Speaker. The Strangers' Gallery is open free to the public.

Roll of Members of the House of Representatives, August, 1896.

Speaker—The Hon. Sir George Maurice O'Rorke, Kt.

Chairman of Committees—Arthur Robert Guinness.

Name.	Electoral District.	Date of Notification of Return of Writ.
For European Electorates.		
Allen, James	Bruce	13 December, 1893.
Bell, Francis Henry Dillon	City of Wellington	"
Buchanan, Walter Clarke	Wairarapa	"
Buddo, David	Kaiapoi	"
Buick, Thomas Lindsay	Wairau	"
Button, Charles Edward	City of Auckland	"
Cadman, Hon. Alfred Jerome	Waikato	"
Carncross, Walter Charles Frederick	Taieri	"
Carnell, Samuel	Napier	"
Carroll, Hon. James	Waiapu	"
Collins, William Whitehouse	City of Christchurch	"
Crowther, William	City of Auckland	"
Duncan, Thomas	Oamaru	"
Duthie, John	City of Wellington	"
Earnshaw, William	City of Dunedin	"

Roll of Members of the House of Representatives—*continued.*

Name.	Electoral District.	Date of Notification of Return of Writ.
Flatman, Frederick Robert ..	Pareora	13 December, 1893.
Fraser, William	Wakatipu ..	"
Graham, John	City of Nelson ..	"
Green, James	Waikouaiti ..	"
Guinness, Arthur Robert.. ..	Grey	"
Hall, Charles	Waipawa.. ..	"
Hall-Jones, Hon. William ..	Timaru	"
Harris, Benjamin	Franklin	"
Hogg, Alexander Wilson ..	Masterton ..	"
Houston, Robert Morrow ..	Bay of Islands ..	"
Hutchison, George	Patea	"
Hutchison, William	City of Dunedin ..	"
Joyce, John	Lyttelton.. ..	"
Kelly, James Whyte	Invercargill ..	"
Kelly, William	Bay of Plenty ..	"
Lang, Frederic William	Waipa	"
Larnach, Hon. William James Mudie, C.M.G.	Tuapeka	17 July, 1894.
Lawry, Frank	Parnell	13 December, 1893.
Lewis, Charles	City of Christchurch	21 February, 189
McGowan, James	Thames	13 December, 1893.
McGuire, Felix	Egmont	"
McKenzie, Hon. John	Waihemo ..	"
McKenzie, Roderick	Buller	"
Mackenzie, Thomas	Clutha	"
Mackintosh, James	Wallace	"
McLachlan, John	Ashburton ..	"
McNab, Robert	Mataura	"
Maslin, William Stephen ..	Rangitata ..	"
Massey, William Ferguson ..	Waitemata ..	17 April, 1894.
Meredith, Richard	Ashley	13 December, 1893.
Millar, John Andrew	Chalmers.. ..	"
Mills, Charles Houghton.. ..	Waimea-Sounds ..	"
Mitchelson, Hon. Edwin.. ..	Eden	"
Montgomery, William Hugh ..	Ellesmere ..	"
Morrison, Arthur	Caversham ..	"
Newman, Alfred Kingcome ..	Wellington Suburbs	"
O'Regan, Patrick Joseph.. ..	Inangahua ..	"
O'Rorke, Hon. Sir George Maurice, Knt. Bach.	Manukau.. ..	"
Pinkerton, David	City of Dunedin ..	"
Pirani, Frederick	Palmerston ..	"
Russell, George Warren	Riccarton ..	"
Russell, William Russell ..	Hawke's Bay ..	"
Saunders, Alfred	Selwyn	"
Seddon, Hon. Richard John ..	Westland ..	"
Smith, Edward Metcalf	New Plymouth ..	"
Smith, George John	City of Christchurch	"
Stevens, John	Rangitikei ..	"
Steward, Hon. William Jukes ..	Waitaki	"
Stout, Hon. Sir Robert, K.C.M.G.	City of Wellington	"
Tanner, William Wilcox.. ..	Avon	"
Thompson, Robert	Marsden	"
Thompson, Hon. Thomas ..	City of Auckland ..	27 July, 1895.

ROLL OF MEMBERS OF THE HOUSE OF REPRESENTATIVES—*continued.*

Name.	Electoral District.	Date of Notification of Return of Writ.
Ward, Hon. Joseph George ..	Awarua	13 December, 1893.
Willis, Archibald Duddingston ..	Wanganui ..	"
Wilson, James Glenny	Otaki	"
For Maori Electorates.		
Heke, Hone	Northern Maori ..	11 January, 1894.
Parata, Tame	Southern Maori ..	30 December, 1893.
Pere, Wi	Eastern Maori ..	11 January, 1894.
Te Ao, Ropata	Western Maori ..	2 January, 1894.

Clerk of House of Representatives—G. Friend.
Clerk-Assistant—H. Otterson.
Second Clerk-Assistant—A. J. Rutherfurd.
Reader and Clerk of Bills and Papers— ————.
Chief *Hansard* Reporter—J. Grattan Grey.
Interpreters—L. M. Grace, W. E. Goff.
Sergeant-at-Arms—W. Fraser.
Clerk of Writs—H. Pollen.
Deputy Clerk of Writs—R. H. Govett.
Acting Librarian—H. L. James, B.A.

OFFICIAL LIST.

[September, 1896.]

CIVIL ESTABLISHMENT AT SEAT OF GOVERNMENT.

PREMIER'S OFFICE.

Premier—Hon. R. J. Seddon
Secretary to Premier and to Cabinet—A. J. Willis

COLONIAL SECRETARY'S DEPARTMENT.

CHIEF OFFICE.

Colonial Secretary—Hon.
Under-Secretary—Hugh Pollen
Chief Clerk—R. H. Govett
Clerks—R. F. Lynch, J. F. Andrews, L. W. Loveday
Housekeeper and Chief Messenger—W. H. Hennah

AUDIT OFFICE.

Controller and Auditor-General—J. K. Warburton.
Assistant Controller and Auditor—J. C. Gavin
Chief Clerk—L. C. Roskruge
Clerks—W. Dodd, H. S. Pollen, W. G. Holdsworth, E. J. A. Stevenson, C. M. Georgeson, A. W. Eames
Cadet—J. H. Fowler
Extra Clerks—D. C. Innes, J. Swift, A. E. Bybles, J. Ward, A. A. Bethune, B. A. Meek, C. E. Briggs
Audit Officer, Agent-General's Office, London—C. F. W. Palliser
Audit Travelling Inspectors—P. P. Webb, A. H. Maclean, J. King, W. R. Holmes, E. T. Greville, G. H. I. Easton, C. P. Johnson, J. T. Dumbell, W. H. Carlyle

REGISTRAR-GENERAL'S OFFICE.

Registrar-General—E. J. Von Dadelszen
Chief Clerk—G. Drury
Clerks—F. H. Machattie, S. Coffey, W. W. Cook.

PRINTING AND STATIONERY DEPARTMENT.

Government Printer, Stationery Office Manager, and Controller of Stamp Printing—John Mackay
Superintending Overseer—J. Burns
Chief Clerk and Accountant—B. B. Allen
Clerk and Computer—N. B. K. Manley
Clerks — F. Barraud, J. W. Hall, R. Watts, A. Stace, A. Williams
Cadet—R. A. Gray
Hansard Supervisor—M. F. Marks
Overseers—J. J. Gamble, B. Wilson
Sub-overseer, Jobbing-room—G. Tattle
Overseer, Machine-room—C. Young
Overseer, Binding Branch—W. Franklin
Sub-overseer, Binding Branch—G. H. Broad
Night Foreman—J. F. Rogers
Stamp Printer—H. Hume
Stereotyper and Electrotyper—W. J. Kirk
Readers—W. Fuller, H. S. Mountier
Forewoman, Binding Branch — Miss Thompson.
Engineer—T. R. Barrer

COLONIAL TREASURER'S DEPARTMENT.

CHIEF OFFICE.

Colonial Treasurer—Hon. R. J. Seddon
Secretary to the Treasury, Receiver-General, Paymaster-General, and Registrar of Consols — James B. Heywood
Accountant to the Treasury—Robert J. Collins
Cashier—C. E. Chittey
Corresponding Clerk—H. Blundell
Private Secretary and Shorthand-writer to Colonial Treasurer—
Clerks—C. Meacham, R. B. Vincent, W. E. Cooper, J. Driscoll, E. L. Mowbray, A. O. Gibbes, J. Holmes, H. N. W. Church, J. Eman Smith, T. H. Burnett, J. Radcliffe, A. J. Morgan, T. J. Davis, F. H. Tuckey, H. Hawthorne
Cadets—W. Wilson, G. A. Fraser
Officer for Payment of Imperial Pensions at Auckland—B. J. Devaney

FRIENDLY SOCIETIES' AND TRADES UNIONS' REGISTRY OFFICE; ALSO OFFICE OF THE REGISTRAR UNDER THE INDUSTRIAL CONCILIATION AND ARBITRATION ACT.

Registrar—E. Mason.
Revising Barrister for Friendly Societies and Trades Unions—L. G. Reid
Clerk—C. T. Benzoni

DEPARTMENT OF INDUSTRIES AND COMMERCE.

Minister—Hon. T. Thompson
Clerk—A. M. Smith

LAND AND INCOME TAX DEPARTMENT.

Commissioner—John McGowan
Deputy Commissioner—G. F. C. Campbell
Chief Clerk—F. J. M. D. Walmsley
Accountant—P. Heyes
Clerks—G. Maxwell, H. Nancarrow, A. J. McGowan, J. P. Dugdale, J. M. King, D. R. Purdie, A. F. Oswin, G. W. Jänisch, J. Stevenson, C. V. Kreeft, J. W. Black, A. Clothier, W. M. Tyers, H. H. Seed, D. G. Clark, T. Oswin, J. R. Smyth, H. L. Wiggins
Cadets—P. Hepworth, J. J. Hunt, C. de R. Andrews, M. J. Crombie, J. Ferguson

DEPARTMENT OF JUSTICE.

HEAD OFFICE.

Minister of Justice—Hon. T. Thompson
Under-Secretary—F. Waldegrave
Translator—G. H. Davies
Clerks—C. B. Jordan, C. E. Matthews, W. D. Anderson, G. F. Dixon

CROWN LAW OFFICE.

Attorney-General—(vacant)
Solicitor-General—W. S. Reid
Assistant Law Officer—L. G. Reid
Law Draftsman — F. Fitchett, M.A., LL.D.
Clerk—E. Y. Redward

PATENT OFFICE.

Registrar of Patents, Designs, and Trade-marks—F. Waldegrave
Deputy Registrar—J. C. Lewis
Clerks—M. J. Organ, Mary Eyre

JUDICIAL.

Supreme Court Judges.

Chief Justice—
Wellington—Sir J. Prendergast, Knt.
Puisne Judges—
Wellington—W. B. Edwards
Auckland—E. T. Conolly
Christchurch—J. E Denniston
Dunedin—J. S. Williams

District Court Judges.

Wairarapa, Wanganui, New Plymouth, Hawera, and Palmerston North—C. C. Kettle
Nelson—H. W. Robinson
Ashburton, Timaru, Oamaru, Queenstown, Naseby, Lawrence, Invercargill, Hokitika, Greymouth, Westport, and Reefton—C. D. R. Ward

Registrars of the Supreme Court.

Auckland—H. C. Brewer
New Plymouth—W. Stuart
Wanganui—C. C. Kettle
Napier—A. Turnbull
Gisborne—W. A. Barton
Wellington—D. G. A. Cooper
Nelson—H. W. Robinson
Blenheim—J. Allen
Christchurch—A. R. Bloxam
Hokitika—A. H. King
Dunedin—C. McK. Gordon
Invercargill—F. G. Morgan

Sheriffs

Auckland—H. C. Brewer
Taranaki—W. G. P. O'Callaghan
Hawke's Bay—A. Turnbull
Poverty Bay—W. A. Barton
Wellington—D. G. A. Cooper
Wairarapa—T. Hutchison
Wanganui and Rangitikei—A. D. Thomson
Nelson—W. Heaps
Westland North—A. Greenfield
Central Westland—H. Lucas
Marlborough—J. B. Stoney
Canterbury—A. R. Bloxam
Timaru—C. A. Wray
Westland—A. H. King
Otago—C. McK. Gordon
Southland—W. Martin

Crown Solicitors.

Auckland—Hon. J. A. Tole
New Plymouth—A. Standish
Gisborne—J. W. Nolan
Napier—A. J. Cotterill
Wellington—H. Gully
Wanganui—S. T. Fitzherbert
Nelson—C. Y. Fell
Blenheim—R. McCallum
Christchurch—T. W. Stringer
Timaru—J. W. White
Hokitika—
Dunedin—B. C. Haggitt
Invercargill—T. M. Macdonald
Oamaru—A. G. Creagh

Crown Prosecutors (District Courts).

New Plymouth—A. Standish
Hawera—E. L. Barton
Wanganui and Palmerston North—S. T. Fitzherbert
Westport and Reefton—C. E. Harden
Hokitika—J. Park
Greymouth—M. Hannan
Timaru—J. W. White
Oamaru—A. G. Creagh
Nelson—C. Y. Fell
Queenstown—Wesley Turton
Invercargill—T. M. Macdonald

Stipendiary Magistrates.

Auckland—H. W. Northcroft
Pokeno, Waikato, &c.—T. Jackson
Onehunga, &c.—R. S. Bush*
Russell, &c.—J. S. Clendon
Tauranga, &c.—J. M. Roberts
Thames, &c.—H. E. Kenny*
Gisborne, &c.—J. Booth
New Plymouth—W. Stuart
Hawera, &c.—H. W. Brabant
Wanganui, &c.—C. C. Kettle
Palmerston North, &c.—R. L. Stanford
Wellington, &c.—
Wairarapa, &c.—T. Hutchison
Napier, &c.—A. Turnbull
Nelson, &c.—H. W. Robinson, Wilson Heaps
Westport, Collingwood, &c.—A. Greenfield*
Blenheim, &c.—J. Allen*
Christchurch, &c.—R. Beetham
Kaiapoi, &c.—H. W. Bishop
Timaru, &c.—C. A. Wray
Greymouth, &c.—H. A. Stratford*
Hokitika, &c.—D. Macfarlane*
Dunedin, &c.—E. H. Carew
Oamaru, &c.—J. Keddell*
Milton, &c.—R. S. Hawkins*
Clyde, &c.— S. E. McCarthy.
Naseby—S. M. Dalgleish*
Invercargill, &c.—J. W. Poynton*
Chatham Islands—F. J. W. Gascoyne

Official Assignees in Bankruptcy.

Auckland—J. Lawson, J.P.
Wellington—J. Ashcroft, J.P.
Christchurch—G. L. Greenwood
Dunedin—C. C. Graham, J.P.

Clerks of District and Magistrates' Courts.

New Plymouth—W. G. P. O'Callaghan
Hawera—A. Trimble

* Are also Wardens of Goldfields.

Wanganui—A. D. Thomson
Palmerston North—W. Matravers
Masterton—F. H. Ibbetson
Nelson—C. H. Webb-Bowen
Hokitika—C. A. Barton
Greymouth—B. Harper
Westport—E. C. Kelling
Reefton—H. Lucas
Timaru—T. Howley
Ashburton—J. R. Colyer
Oamaru—H. H. G. Ralfe
Invercargill—W. Martin
Queenstown—H. N Firth
Lawrence—A. M. Eyes
Naseby—John Terry

Receivers of Gold Revenue, Mining Registrars, and Clerks of Wardens' and Magistrates' Courts.

Thames—J. Jordan
Coromandel—T. M. Lawlor
Paeroa—T. A. Moresby
Te Aroha—J. M. Hickson
Whangarei—T. W. Tayler
Havelock and Cullensville (Marlborough)—H. G. Hoddinott
Nelson—C. H. Webb-Bowen
Motueka—H. E. Gilbert
Collingwood—S. J. Dew
Westport—E. C. Kelling
Charleston—John Bird
Reefton—H. Lucas
Greymouth—B. Harper
Kumara—J. McEnnis
Hokitika—C. A. Barton
Naseby, &c.—John Terry
Wyndham—D. Bogue
Clyde, Blacks, and Alexandra—F. T. D. Jeffrey
Cromwell—J. Fleming
Queenstown and Arrowtown—H. N. Firth
Lawrence—A. M. Eyes
Riverton—A. A. Mair

Clerks of Magistrates' Courts.

Auckland—F. J. Burgess
Tauranga—J. Thomson
Gisborne—W. A. Barton
Hamilton—T. Kirk
Napier—R. B. Mathias
Hastings—P. Skerrett
Marton, &c.—F. M. Deighton
Wellington—W. P. James
Blenheim—J. B. Stoney
Christchurch—W. G. Walker
Lyttelton—W. Shanaghan
Kaiapoi—M. Lynskey
Dunedin—A. S. B. Forster

Native Land Court.

Chief Judge—G. B. Davy
Judges—A. Mackay, D. Scannell, R. Ward, H. W. Brabant, W. E. Gudgeon, W. J. Butler, H. F. Edger, W. G. Mair, J. A. Wilson, H. D. Johnson
Registrars—Auckland, J. W. Browne; Gisborne, J. Brooking; Wellington, E. Buckle

Commissioners of the Native Land Court.

R. S. Bush, J. Booth, A. Turnbull, J. S. Clendon, T. Jackson, C. C. Kettle, J. M. Roberts, W. Stuart, H. W. Bishop, E. H. Carew, F. J. W. Gascoyne, H. E. Kenny
Government Native Agent, Otorohanga—G. T. Wilkinson

Validation Court.

Judge—G. E. Barton; also the Chief Judge and Judges of the Native Land Court
Registrar and Clerk—R. C. Sim

Coroners.

Coroners—Auckland, T. M. Philson, H. W. Northcroft, R. S. Bush, E. Baker; Akaroa, G. H Saxton; Blenheim, J. Allen; Christchurch, R. Beetham and H. W. Bishop; Clyde, S. E. McCarthy; Collingwood, E. Davidson; Coromandel, A. R. H. Swindley; Dunedin, E. H. Carew; Foxton, E. S. Thynne; Gisborne, J. Booth; Greymouth, H. A. Stratford; Huntly, T. H. White; Hawera, C. E. Major; Hokitika, D. Macfarlane and R. W. Wade; Invercargill, J. W. Poynton; Lawrence, R. S. Hawkins; Mahurangi, M. Angove; Marton, A. Simpson; Masterton, T. Hutchison; Napier, A. Turnbull; Naseby, S. M. Dalgleish; Nelson, O. Curtis, H. W. Robinson, W. Gibbs, and L. G. Boor; New Plymouth, W. Stuart; Oamaru, J. Keddell; Opotiki, S. Bates; Otahuhu, S. Luke; Otaki, W. H. Simcox; Paeroa, W. Forrest; Palmerston North, J. Linton; Pokeno, T. Jackson; Port Albert, J. Shepherd; Pahi, J. B. Ariell; Queenstown, L. Hotop; Raglan, W. H. Wallis; Southbridge, R. B. Willis; Stratford, H. J. C. Coutts; Tauranga, A. C. H. Tovey and J. M. Roberts; Te Awamutu, T. Gresham; Timaru, C. A. Wray; Te Kopuru, T. Webb; Thames, C. Haselden, A.

Bruce, and H. E. Kenny; Waimate, E. M. Williams; Waipawa, S. Johnson; Wellington, J. Ashcroft; Westport, A. Greenfield; Wanganui, H. W. Brabant and C. C. Kettle; Whangarei, J. Bell; Woodville, E. J. Gothard; Chatham Islands, F. J. W. Gascoyne.

PRISONS DEPARTMENT.

Inspector—Lieut.-Colonel Arthur Hume, N.Z.M.
Clerk—T. E. Richardson
Gaolers — Auckland, George Sinclair Reston; Dunedin, Samuel Charles Phillips; Hokitika, Bartholomew Lloyd O'Brien; Invercargill, John Henry Bratby; Lyttelton, Matthew Michael Cleary; Napier, Francis Edward Severne; Nelson, Thomas R. Pointon; New Plymouth, Edward Rickerby; Wanganui, Robert T. Noble Beasley; Wellington, Patrick Samuel Garvey

DEPARTMENT OF LABOUR.

Minister of Labour—Hon. R. J. Seddon
Secretary for Labour and Chief Inspector of Factories—E. Tregear
Chief Clerk—James Mackay
Cadets—F. W. T. Rowley, F. A. De la Mare

INSPECTORS OF FACTORIES.

North Island — J. Mackay, J. Shanaghan, H. Ferguson, L. D. Browett, Margaret Scott, and 71 local Inspectors
South Island—J. Mackay, J. Shanaghan, J. Lomas, H. Maxwell, Margaret Scott, and 68 local Inspectors.
(There are also 200 Bureau Agents in different parts of the colony.)

PUBLIC WORKS DEPARTMENT.

HEAD OFFICE.

Minister for Public Works—Hon. W. Hall-Jones
Under-Secretary—H. J. H. Blow
Engineer-in-Chief—W. H. Hales
Resident Engineer (Head Office)—P. S. Hay, M.A., M.Inst.C.E.
Chief Clerk—J. A. McArthur
Accountant—G. J. Clapham
Land-purchase Officer—H. Thompson
Record Clerk—H. W. H. Millais
Clerks—W. D. Dumbell, L. F. Tegnér, J. H. Denton, H. R. Rae, J. Williams, N. Jacobs, E. McCarthy, J. A. McAlister, A. Lewis, E. Horneman, F. E. Banks, A. H. Kimbell
Chief Draughtsman—W. G. Rutherford
Architectural Draughtsman—J. Campbell
Draughtsmen—T. Perham, E. Jackson, W. Withers, W. G. Swan, J. H. Price
Engineering Cadet—W. Sherratt

DISTRICT OFFICES.

District Engineer — Dunedin, E. R. Ussher, M.Inst.C.E.
Resident Engineers — Auckland, C. R. Vickerman; Hunterville, W. A. Shain; Wellington, J. A. Wilson; Westport, T. H. Rawson; Greymouth, J. Thomson, B.E.; Hyde, G. L. Cook, M.Inst.C.E. In charge of North Island Main Trunk Railway survey, R. W. Holmes
Assistant Engineers—J. D. Louch, A. C. Koch, H. Macandrew, F. M. Hewson, J. J. Hay, M.A., W. H. Gavin, J. W. Richmond, J. S. Stewart, T. Roberts, J. H. Dobson, S. Harding
Engineering Cadets—J. H. Lewis, H. Dickson, J. E. W. McEnnis, F. W. Furkert, A. Jack, J. Meenan, W. A. Jeff
Clerks, Draughtsmen, &c.—W. Black, C. T. Rushbrook, C. Wood, J. Young, A. Biddell, W. A. Cumming, T. Douglas, E. C. Farr, P. F. M. Burrows, E. Sandford, W. E. Butler, J. C. Fulton, J. H. Churches, J. B. Borton, A. R. Stone, E. Waddell, P. S. Waldie, L. M. Shera, A. W. Hamann

INSPECTION OF MACHINERY BRANCH.

Inspectors of Machinery—Chief Inspector, R. Duncan; Auckland, W. J. Jobson, L. Blackwood; Wellington, H. A. McGregor, P. J. Carman; Christchurch, G. Croll; Dunedin, A. Morrison, H. Wetherilt
Clerk—R. P. Milne
Cadet—B. Anderson

RAILWAY DEPARTMENT.

Minister for Railways—Hon. A. J. Cadman
Under-Secretary—H. J. H. Blow
General Manager—T. Ronayne
Assistant General Manager—C. Hudson
Chief Clerk—T. W. Waite
Clerks—R. W. McVilly, C. Isherwood, E. J. Andrews, B. M. Wilson, W. Johnston, L. C. E. Hamann, J. E. Widdop, W. H. Gifford, A. D. Miller, R. D. Scott, R. Hope

Audit Inspectors—D. Munro, C. L. Russell, H. Baxter
Railway Accountant—A. C. Fife
Clerks—H. Davidson, G. G. Wilson, M. C. Rowe, J. H. Davies, S. P. Curtis, J. McLean, E. Davy, A. Morris, V. Jänisch, E. P. Brogan, C. Batten, W. B. Fisher, J. Firth, E. J. Fleming, E. R. Nicholson, R. J. Loe, F. W. Lash, A. H. Hunt, W. Bourke, W. H. Hales, W. E. Ahern, T. A. O'Connor
Stores Manager—G. Felton
Clerks—A. M. Heaton, R. E. Mackay, J. Webster, J. E. Hasloch, S. Alpe, H. W. Barbor, R. H. Stephens, E. J. Maguiness
District Managers—Whangarei, H. B. Dobbie; Kawakawa, J. D. Harris; Kaihu, T. H. Barstow; Auckland, A. Grant; Wanganui, H. Buxton; Napier, E. G. Pilcher; Wellington, T. E. Donne; Greymouth, D. T. McIntosh; Westport, T. A. Peterkin; Nelson, H. St. J. Christophers; Christchurch, W. H. Gaw; Dunedin, T. Arthur; Invercargill, S. F. Whitcombe; Picton, A. Duncan (Station-master in charge)
Chief Engineer for Working Railways—J. H. Lowe, M.Inst.C.E.
Resident Engineer—F. W. MacLean
Railway Land Officer—E. G. H. Mainwaring
Chief Draughtsman—G. A. Troup
Draughtsmen—J. A. Henderson, J. Besant, C. T. Jeffreys, F. C. Widdop
Clerks—W. P. Hicks, G. McCartney, W. S. Ridler, J. T. Ford, W. A. Mirams, H. Jessup, H. W. Rowden, R. S. Kent, E. D. Richards
Resident Engineers—Auckland, A. V. Macdonald; Napier-Taranaki, ——; Christchurch, James Burnett; Dunedin, J. Coom; Invercargill, C. H. Biss (Assistant Engineer)
Locomotive Superintendent—T. F. Rotheram
Clerks—R. Triggs, W. H. Butterworth, C. Loveday, F. T. Murison, P. A. Buck, W. B. Sinclair, J. M. Tasker, G. A. Bush
Chief Draughtsman—G. A. Pearson
Draughtsmen—R. Pye-Smith, E. E. Gillon
Locomotive Engineers—Wellington, H. H. Jackson; Auckland, J. H. Fox; Wanganui, A. L. Beattie

POST OFFICE AND TELEGRAPH DEPARTMENT.

General Post Office.

Postmaster-General and Commissioner of Electric Telegraphs—Hon. R. J. Seddon
Secretary—W. Gray
Superintendent of Electric Lines—J. K. Logan
Assistant Secretary and Inspector—T. Rose
Controller of Money-orders and Savings-banks, and Accountant—G. Gray
Chief Clerk—D. Robertson
Clerks—W. R. Morris, E. V. Senn, F. V. Waters, H. Plimmer, J. C. Williamson, W. Crow, G. Cenci, L. Ledger, V. J. Brogan, W. Callaghan, G. W. Moorhouse, W. Chegwidden, H. S. B. Miller, H. Huggins, G. V. Hudson, F. Perrin, H. D. Grocott, J. Brennan, H. Cornwall, R. J. Thompson, R. E. Hayes, D. A. Jenkins, E. Fitzsimons, H. N. McLeod, J. C. Redmond, W. Davies, C. B. Harton, W. J. Drake, R. F. Smith, J. D. Avery, J. G. Roache, J. Coyle, F. W. Faber, W. H. Carter, J. J. Murray, P. Tyrrell, A. T. Markmann, P. Kelleher, W. A. Tanner, H. A. English, G. H. Harris, H. C. Hickson, E. Bermingham, C. Bermingham, S. Brock, F. Menzies, E. Harris, B. Kenny, V. Johnston, M. A. McLeod, C. Smith
Electrician—W. C. Smythe
Mechanician—H. F. Smith
Assistant Mechanician—A. W. Macandrew
Storekeeper—J. Black
Assistant Storekeeper—C. B. Mann
Clerk—C. Nicholls
Cadet—F. H. Guinness
Circulation Branch (Post Office)—J. Hoggard, Chief Clerk

Inspectors of Telegraphs.

Auckland—E. H. Bold
Christchurch—W. G. Meddings
Dunedin—J. Orchiston

Assistant Inspectors of Post Offices.

D. Cumming, C. J. A. Tipping, S. P. Stevens

Sub-Inspector of Telegraphs.

Nelson—J. W. Gaunaway

Chief Postmasters.

Auckland—S. B. Biss
*Thames—J. E. Coney
*Gisborne—W. W. Beswick
Napier—S. J. Jago
*New Plymouth—F. D. Holdsworth
*Wanganui—J. F. McBeth
*Blenheim—J. Bull
*Nelson—H. Calders
*Westport—J. H. Sheath
*Greymouth—C. J. Berry
*Hokitika—A. E. Cresswell
Christchurch—R. Kirton
*Timaru—R. J. Goodman
*Oamaru—J. A. Hutton
Dunedin—E. Cook
*Invercargill—J. W. Wilkin

Officers in Charge of Telegraph Offices.

Auckland—W. S. Furby
Napier—H. W. Harrington
Wellington—C. C. Robertson
Christchurch—J. W. Mason
Dunedin—J. G. Ballard.

DEPARTMENT OF TRADE AND CUSTOMS.

Commissioner of Trade and Customs—Hon. R. J. Seddon.
Secretary and Inspector of Customs and Secretary of Marine—W. T. Glasgow.
Chief Clerk—T. Larchin
Clerks, Customs—G. Craig, P. Doull.
Audit—H. W. Brewer, H. Crowther (Writer)

Collectors of Customs.

Auckland—A. Rose
Poverty Bay—E. Pasley
New Plymouth—H. Bedford
Napier—E. R. C. Bowen
Wellington—D. McKellar
Wanganui—A. Elliott
Wairau—A. Carter
Nelson—W. Heaps
Westport—J. Mills
Greymouth—A. McDowell
Hokitika—E. Chilman
Lyttelton and Christchurch—E. Patten
Timaru—A. Hart
Oamaru—J. P. Ridings
Dunedin—C. W. S. Chamberlain
Invercargill and Bluff Harbour—D. Johnston, jun.

*These are combined post- and telegraph-offices.

Officers in Charge of Ports, and Coastwaiters.

Thames—T. C. Bayldon, Coastwaiter
Russell—H. Stephenson, Coastwaiter
Tauranga—E. Northcroft, Officer in Charge
Whangaroa—A. G. Ratcliffe, Coastwaiter
Whangarei—J. Munro, Coastwaiter
Mongonui—A. D. Clemett, Officer in Charge
Hokianga—G. Martin, Coastwaiter
Kaipara—J. C. Smith, Officer in Charge
Waitara—J. Cameron, Coastwaiter
Foxton—J. B. Imrie, Officer in Charge
Patea—J. W. Glenny, Officer in Charge
Picton—F. Teesdale, Officer in Charge
Chatham Islands—F. J. W. Gascoyne, Officer in Charge

MARINE DEPARTMENT.

Minister of Marine—Hon. W. Hall-Jones
Secretary—W. T. Glasgow
Chief Clerk—G. Allport
Clerk—J. J. D. Grix
Cadet—G. Sinclair
Marine Engineer for the Colony—W. H. Hales.
Nautical Adviser and Chief Examiner of Masters and Mates—G. Allman
Examiners of Masters and Mates—R. A. Edwin, Com. R.N.
Weather Reporter—R. A. Edwin, Com. R.N.
Examiners of Masters and Mates, Auckland—T. C. Tilly and J. Robertson
Examiner of Masters and Mates, Lyttelton—J. A. H. Marciel
Examiner of Masters and Mates, Dunedin—W. J. Grey
Engineer Surveyors and Examiners of Engineers, Auckland—W. J. Jobson and L. Blackwood
Engineer Surveyors and Examiners of Engineers, Wellington—R. Duncan (Principal), H. A. McGregor, and P. Carman
Engineer Surveyor and Examiner of Engineers, Christchurch—G. Croll
Engineer Surveyors and Examiners of Engineers, Dunedin—A. Morrison and H. Wetherilt.
Master of Government steamer—J. Fairchild

Inspectors of Sea Fisheries.

Russell—H. Stephenson
Whangarei—J. Munro
Wellington—F. Moorhouse
Hokitika—J. Duncan
Bluff—P. McGrath

HARBOURMASTERS.*

Collingwood—J. E. Fletcher
Foxton—A. Seabury
Hokianga—G. Martin
Russell—H. Stephenson
Kaipara—J. Christy Smith
Manukau—J. Robertson
Nelson—F. W. Cox
Okarito—G. Thomson
Picton—A. Duncan
Port Robinson—J. Sinclair
Waitapu—S. G. Robinson

STAMP DEPARTMENT.

Commissioner of Stamp Duties—Hon. Jas. Carroll
Secretary for Stamps—C. A. St. G. Hickson
Chief Clerk and Accountant—H. O. Williams
Custodian and Issuer of Stamps—W. H. Shore
Record and Receiving Clerk—J. P. Murphy
Clerk—J. Murray
Chief Stamper—C. Howe

DEPUTY COMMISSIONERS OF STAMPS.

Auckland—E. Bamford
Gisborne—W. W. Beswick
Taranaki—W. Stuart
Hawke's Bay—Thos. Hall
Wellington—C. A. St. G. Hickson
Wanganui J. F. McBeth
Nelson—W. W. de Castro
Marlborough—A. V. Sturtevant
Canterbury—E. Denham
Timaru—R. J. Goodman
Otago—P. C. Corliss
Southland—F. G. Morgan
Westland—A. H. King

LAND TRANSFER DEPARTMENT AND DEEDS REGISTRY.

Registrar-General of Land and Deeds—G. B. Davy
Secretary, Land and Deeds—C. A. St. G. Hickson

DISTRICT LAND REGISTRARS AND REGISTRARS OF DEEDS.

Auckland—E. Bamford
Taranaki—W. Stuart
Wellington—J. M. Batham
Hawke's Bay—Thos. Hall
Nelson—H. W. Robinson
Marlborough—J. Allen
Canterbury—G. G. Bridges and E. Denham
Otago—H. Turton
Southland—F. G. Morgan
Westland—A. H. King

EXAMINERS OF TITLES.

Auckland—E. Bamford
Taranaki—W. Stuart
Wellington—J. M. Batham, H. Howorth
Hawke's Bay—Thos. Hall
Nelson—H. W. Robinson
Marlborough—J. M. Batham
Canterbury—G. G. Bridges
Otago—H. Turton
Southland—F. G. Morgan
Westland—A. H. King

REGISTRAR OF JOINT-STOCK COMPANIES.

C. A. St. G. Hickson

ASSISTANT REGISTRARS OF JOINT-STOCK COMPANIES.

Auckland—E. Bamford
Taranaki—W. Stuart
Hawke's Bay—Thos. Hall
Wellington—H. O. Williams
Nelson—W. W. de Castro
Marlborough—A. V. Sturtevant
Canterbury—E. Denham
Otago—P. C. Corliss
Southland—F. G. Morgan
Westland—A. H. King

EDUCATION DEPARTMENT.

Minister of Education (administering also Native schools, industrial schools, and the institution for deaf-mutes)—Hon. W. C. Walker
Secretary for Education and Inspector-General of Schools—Rev. W. J. Habens, B.A.
Chief Clerk—Sir E. O. Gibbes, Bart.
Clerks—F. K. de Castro, H. B. Kirk, M.A., R. H. Pope, F. L. Severne, E. C. Banks, F. D. Thomson
Inspector of Native Schools—James H. Pope. Assistant Inspector—H. B. Kirk, M.A.

EDUCATION BOARDS.

Auckland—V. E. Rice, Secretary
Taranaki—E. Veale, Secretary
Wanganui—A. A. Browne, Secretary
Wellington—A. Dorset, Secretary

* The more important harbours are controlled by local Boards, not by the Marine Department.

Hawke's Bay—G. T. Fannin, Secretary
Marlborough—J. Smith, Secretary
Nelson—S. Ellis, Secretary
Grey—W. Riemenschneider, Secretary
Westland—A. J. Morton, B.A., Secretary
Canterbury North—H. C. Lane, Secretary
Canterbury South—J. H. Bamfield, Secretary
Otago—P. G. Pryde, Secretary
Southland—J. Neill, Secretary

SCHOOL COMMISSIONERS
(*Administrators of Education Reserves*).

Auckland—H. N. Garland, Secretary
Taranaki—E. Veale, Secretary
Wellington—N. Tone, Secretary
Hawke's Bay—E. P. A. Platford, Secretary
Marlborough—J. Smith, Secretary
Nelson—A. T. Jones, Secretary
Westland—A. J. Morton, Secretary
Canterbury—H. H. Pitman, Steward of Reserves
Otago—C. Macandrew, Secretary

INDUSTRIAL SCHOOLS.

Auckland Industrial School—Miss S. E. Jackson, Manager
St. Mary's Industrial School, Ponsonby—Rev. G. M. Lenihan, Manager
St. Joseph's Industrial School, Wellington—Rev. T. G. Dawson, Manager
St. Mary's Industrial School, Nelson—Rev. W. J. Mahoney, Manager
Burnham Industrial School (Canterbury)—T. Palethorpe, Manager
Caversham Industrial School (Otago)—G. M. Burlinson, Manager

INSTITUTION FOR DEAF-MUTES, SUMNER.

Director—G. Van Asch
Steward—H. Buttle

LUNATIC ASYLUMS.

Inspector—Duncan MacGregor, M.A., M.B., C.M.
Deputy Inspector—Mrs. Grace Neill
Medical Superintendent, Auckland Asylum—Ernest E. Fooks, M.B.
Medical Superintendent, Christchurch Asylum—E. G. Levinge, M.B.
Medical Superintendent, Wellington and Porirua Asylums—Gray Hassell, M.D.
Medical Superintendent, Seacliff Asylum—F. Truby King, M.B.
Superintendent, Hokitika Asylum—H. Gribben
Superintendent, Nelson Asylum—J. Morrison
Ashburn Hall, Waikari (private asylum)—Proprietor, Dr. Alexander

MINES DEPARTMENT.

CHIEF OFFICE.

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Under-Secretary for Mines—H. J. H. Eliott
Inspecting Engineer—
Chief Clerk—T. H. Hamer
Clerks—T. S. M. Cowie, H. E. Radcliffe
Analyst—W. Skey
Geologist—Alexander McKay, F.G.S.
Assistant Geologist—W. A. McKay
Draughtsman—C. H. Pierard

INSPECTORS OF MINES.

Thames and Auckland Districts—G. Wilson; Canterbury, Dunedin, and Southland Districts—J. Gow; West Coast Districts, N. D. Cochrane

MANAGERS OF WATER-RACES.

Waimea-Kumara—A. Aitken
Mount Ida—R. Murray

SCHOOLS OF MINES.

Lecturers and Instructors: Thames—F. B. Allen; Assistant, Percy Morgan. Reefton—R. M. Aitken

BOARD OF EXAMINERS UNDER "THE COAL-MINES ACT, 1891."

The Director of the Geological Survey of New Zealand; the Surveyor-General; the Inspecting Engineer of Mines; the Chief Inspector of Machinery, Wellington; James Bishop, of Brunnerton; Thomas Brown, of Denniston; and William Shore, of Kaitangata

BOARD OF EXAMINERS UNDER "THE MINING ACT, 1891."

Same official members as above Board, with the following private members: James Coutts and Thomas Dunlop, of the Thames; Patrick Quirk Caples, of Reefton

The Director of the Geological Survey of New Zealand is Chairman of both Boards, and Mr. T. H. Hamer is the Secretary.

GEOLOGICAL SURVEY, MUSEUM, AND OBSERVATORIES.

Minister in Charge—The Hon. Minister of Mines
Director—Sir J. Hector, K.C.M.G., M.D., F.R.S.
Clerk, Curator, and Meteorological Observer for Wellington—R. B. Gore
Astronomical Observer—T. King
Meteorological Observer, Auckland—T. F. Cheeseman, F.L.S.
Meteorological Observer, Dunedin—H. Skey
Meteorological Observer, New Plymouth—E. Veale
Meteorological Observer, Hokitika—A. D. Macfarlane

NEW ZEALAND INSTITUTE.

Manager—Sir J. Hector, K.C.M.G., M.D., F.R.S.
Hon. Treasurer—W. T. L. Travers, F.L.S.
Secretary—R. B. Gore

DEFENCE DEPARTMENT.

Minister of Defence—Hon. T. Thompson
Under-Secretary—Major Sir A. P. Douglas, Bart., late R.N.
Military Adviser and Inspector of the N.Z. Forces—Colonel F. J. Fox, N.Z.M., late Major, R.A.
Clerk—T. F. Grey

HARBOUR DEFENCE.

Chief Engineer—W. H. Hales

Defence Store Department.

Storekeeper—Capt. S. C. Anderson.
Assistant Storekeeper—T. H. Sewell
Clerk—J. O'Sullivan

NEW ZEALAND PERMANENT MILITIA.

Artillery.

Major F. Y. Goring
Major W. B. Messenger
Captain H. C. Morrison
Captain J. Coleman
Lieutenant J. E. Hume

Inspector of Submarine Mining Establishment.

Captain J. Falconer

Torpedo Corps.

Captain J. Falconer
Captain W. T. Powell

Quartermaster, Permanent Militia.

Captain S. C. Anderson

Surgeon, Permanent Militia (Wellington).

John Teare, M.B.

Surgeon, Permanent Militia (Auckland).

John Wilkins, M.R.C.S.E.

Honorary Surgeon, Permanent Militia.

Patrick J. O'Neill O'Carroll

Honorary Chaplain, Lyttelton Detachment Permanent Militia.

The Rev. E. E. Chambers

Honorary Chaplain, Wellington Detachment Permanent Militia.

The Rev. W. C. Waters, M.A.

Officers Commanding Militia and Volunteer Districts, and Adjutants.

Auckland—Lieut.-Colonel Forster Yelverton Goring, N.Z.M. Acting Adjutant: Lieut. John Grant, N.Z. Vols.
Wellington—Lieut.-Colonel Stuart Newall, N.Z.M.
Canterbury—Lieut.-Colonel Henry Gordon, N.Z.M., late H.M. 44th Foot
North Otago—V.D. Major Alfred Headland
South Otago—Lieut.-Colonel William Holden Webb, N.Z.M., late H.M. 109th Foot
Southland—V.D. Lieut.-Colonel James Ewart Hannah, N.Z. Vols.
Nelson—V.D. Lieut.-Colonel Albert Pitt, N.Z.M. Adjutant: Wm. S. Littlejohn (Captain, Nelson College Cadets)

NEW ZEALAND POLICE FORCE.

Head Office.

Commissioner—Lieutenant-Colonel A. Hume
Clerks—John Evans, John Tasker

Police Department.

Inspectors, 1st Class—Thomas Broham, Peter Pender, William Stone Pardy, John Emerson, James Hickson, Francis McGovern
Inspector, 2nd Class—John Pratt

DEPARTMENT OF LANDS AND SURVEY.

Head Office.

Minister of Lands—Hon. John McKenzie
Surveyor-General and Secretary for Crown Lands—S. Percy Smith, F.R.G.S.
Superintending Surveyor and Under-Secretary for Crown Lands—Alexander Barron
Chief Draughtsman—F. W. Flanagan
Chief Clerk—W. S. Short
Chief Accountant—H. J. Knowles
Auditor of Land Revenue (acting)—W. G. Runcie
Superintendent of Village-settlements—J. E. March

Auckland District.

Chief Surveyor and Commissioner of Crown Lands—G. J. Mueller
District Surveyors—L. Cussen, J. Baber, jun., G. A. Martin
Assistant Surveyors—A. H. Vickerman, H. D. M. Haszard, T. K. Thompson, R. S. Galbraith, D. Innes Barron
Road Surveyors—C. W. Hursthouse, A. B. Wright, R. H. Reaney
Chief Draughtsman—W. C. Kensington
Receiver of Land Revenue—T. M. Taylor
Overseer of Works, Rotorua Sanatorium—J. M. C. Malfroy

Hawke's Bay District.

Chief Surveyor and Commissioner of Crown Lands—T. Humphries
District Surveyors—E. C. Gold-Smith, James Hay
Assistant Surveyor—J. Mouat
Chief Draughtsman—F. Simpson
Receiver of Land Revenue—F. Bull

Taranaki District.

Chief Surveyor and Commissioner of Crown Lands—J. Strauchon
District Surveyor—H. M. Skeet
Assistant-Surveyors—G. H. Bullard, J. F. Frith, W. T. Morpeth
Road Surveyor—G. F. Robinson
Chief Draughtsman—F. E. Clarke
Receiver of Land Revenue—G. P. Doile

Wellington District.

Assistant Surveyor-General and Commissioner of Crown Lands—J. H. Baker
District Surveyors—L. Smith, J. D. Climie, F. A. Thompson
Assistant Surveyors—H. J. Lowe, P. A. Dalziel, J. McKay, J. G. Littlejohn, H. Maitland
Road Surveyors—G. T. Murray, A. C. Turner
Chief Draughtsman—J. McKenzie
Receiver of Land Revenue (Acting)—T. G. Waitt

Nelson District.

Chief Surveyor and Commissioner of Crown Lands—J. S. Browning
District Surveyors—J. A. Montgomerie, F. S. Smith, J. Snodgrass, R. T. Sadd
Assistant Surveyor—J. D. Thomson
Chief Draughtsman—H. Trent
Receiver of Land Revenue—J. T. Catley
Caretaker, Hanmer Springs Sanatorium—J. Rogers

Marlborough District.

Chief Surveyor and Commissioner of Crown Lands—S. Weetman
Assistant Surveyors—D. W. Gillies, E. W. Buckeridge
Chief Draughtsman and Receiver of Land Revenue—G. Robinson

Westland District.

Chief Surveyor and Commissioner of Crown Lands—David Barron
District Surveyor—W. G. Murray
Assistant Surveyor—W. Wilson
Road Surveyor—F. B. Wither
Chief Draughtsman and Receiver of Land Revenue—G. J. Roberts

Canterbury District.

Chief Surveyor and Commissioner of Crown Lands—J. W. A. Marchant
District Surveyors—T. N. Broderick, G. H. M. McClure
Assistant Surveyor—L. O. Mathias
Chief Draughtsman—C. B. Shanks
Receiver of Land Revenue—A. A. McNab

Otago District.

Commissioner of Crown Lands—J. P. Maitland
Chief Surveyor—C. W. Adams
District Surveyors—J. Langmuir, E. H. Wilmot
Assistant Surveyors—D. M. Calder, W. D. R. McCurdie, W. T. Neill
Chief Draughtsman—P. Treseder
Receiver of Land Revenue—G. A. Reade

SOUTHLAND DISTRICT.

Chief Surveyor and Commissioner of Crown Lands—G. W. Williams
District Surveyor—John Hay
Assistant Surveyor—A. Hodgkinson
Chief Draughtsman—J. G. Clare
Receiver of Land Revenue—H. L. Welch

LAND FOR SETTLEMENTS BRANCH.

Land Purchase Inspector—James McKerrow, F.A.S.

MEMBERS OF LAND BOARDS.

Auckland—G. Mueller, R. Thompson, B. Harris, D. Lundon, J. Renshaw
Hawke's Bay—T. Humphries, C. Hall, T. Hyde, R. R. Groom, G. Mathewson
Taranaki—J. Strauchon, T. Kelly, C. K. Stock, J. Heslop, R. B. Roy
Wellington — J. H. Baker, W. A. Fitzherbert, A. W. Hogg, J. Stevens, F. Pirani
Nelson—J. S Browning, J. Kerr, D. Bate, F. Hamilton
Marlborough—S. Weetman, A. P. Seymour, C. H. Mills, J. Redwood, J. A. Parsons
Westland — D. Barron, J. Bevan, L. Northcroft, A. Matheson
Canterbury—J. W. A. Marchant, A. C. Pringle, R. Meredith, D. McMillan, J. McLachlan
Otago—J. P. Maitland, A. McKerrow, H. Clark, J. Duncan, W. Dallas
Southland—G. W. Williams, C. Cowan, A. Kinross, J. McIntyre, A. Baldey

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DEPARTMENT OF AGRICULTURE.

CHIEF OFFICE.

Minister in Charge—Hon. J. McKenzie
Secretary of Agriculture and Chief Inspector of Stock—John D. Ritchie
Assistant Chief Inspector of Stock—T. A. Fraser
Chief Clerk—Richard Evatt
Clerk and Biologist—T. W. Kirk, F.L.S.
Assistant Entomologist at Auckland—Thomas Broun
Veterinary Surgeons — J. A. Gilruth, M.R.C.V.S.; Archibald Park, M.R.C.V.S.
Produce Commissioner, London—Henry Gray
Dairy Commissioner—J. B. MacEwan
Dairy Instructors and Graders—James Sawers, B. Wayte, J. T. Lang, C. W. Sorensen, A. A. Thornton
Pomologists — W. J. Palmer, J. C. Blackmore, Joseph Mayo

INSPECTORS OF STOCK.

Auckland—E. Clifton (in charge), F. Schaw, Auckland; G. S. Cooke, Whangarei; D. Ross, Hamilton
Napier—J. Drummond (in charge), H. Oldham, Napier; C. Thomson, Gisborne; J. Harvey, Woodville
Wairarapa — W. Miller, Masterton; D. Kerr, Carterton
Wellington—W. G. Rees, Wellington
West Coast—A. K. Blundell (in charge), Wanganui; F. E. Orbell, Hawera; H. G. J. Hull, Palmerston North
Nelson—H. M. Campbell, Nelson (in charge); J. A. Easton, Foxhill
Marlborough—John Moore, Blenheim
Westland—V. A Huddleston, Hokitika
Canterbury-Kaikoura—R. F. Holderness (in charge), E. A. Dowden, Christchurch; C. A. Cunningham, Rangiora; J. C. Huddleston, Rotherham; Blair Fullarton, Ashburton
South Canterbury—H. S. Thomson (in charge), Timaru; J. W. Deem, Fairlie; R. H. Hassall, Kurow
Otago—J. E. Thomson, Dunedin; J. S. Nichol, Outram; J. C. Miller, Oamaru; J. L. Bruce, Palmerston; A. Ironside, Clyde; R. I. Gossage, Naseby; C. C. Empson, Lawrence; James Duncan, Balclutha; E. A. Field, Gore; H. T. Turner, Invercargill; J. W. Raymond, Bluff

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GOVERNMENT LIFE INSURANCE DEPARTMENT.

Commissioner—J. H. Richardson, F.F.A.
Assistant Commissioner—D. M. Luckie, F.S.S.
Actuary—Morris Fox
Secretary—W. B. Hudson
Chief Medical Officer—T. Cahill, M.D.
Accountant—G. W. Barltrop
Assistant Actuary—G. Leslie
Chief Clerk—R. C. Niven
Office Examiner—G. A. Kennedy
Second Assistant Actuary—P. Muter
Clerks—J. C. Young, J. W. Kinniburgh, W. S. Smith, R. V. Blacklock, A. H. Hamerton, D. J. McG. McKenzie, F. B. Bolt, C. E. Galwey, H. Spack-

man, T. L. Barker, A. L. B. Jordan, R. T. Smith, J. A. Thomson, F. K. Kelling, H. S. Manning, C. J. Alexander, A. de Castro, F. M. Leckie, C. W. Palmer, J. B. Young, A. Avery, R. P. Hood, G. C. Fache, G. A. N. Campbell, S. P. Hawthorne, W. H. Woon, J. G. Reid, A. T. Traversi
Chief Messenger—W. Archer

AUCKLAND AGENCY.

District Manager—W. J. Speight
Chief Clerk—J. K. Blenkhorn
Clerk—J. B. Watkis

NAPIER AGENCY.

Resident Agent—J. H. Dean

WANGANUI AGENCY.

Resident Agent—J. Fairburn

WELLINGTON AGENCY.

District Manager—G. Robertson
Clerks—G. Crichton, W. C. Marchant

NELSON AGENCY.

Resident Agent—A. P. Burnes

BLENHEIM AGENCY.

Agency Clerk—C. H. Ralph

GREYMOUTH AGENCY.

Resident Agent—A. E. Allison

CHRISTCHURCH AGENCY.

District Manager—J. C. Prudhoe
Chief Clerk—J. W. H. Wood
Clerk—H. Rose.

TIMARU AGENCY.

Agency Clerk—S. T. Wicksteed

OAMARU AGENCY.

Resident Agent—O. H. Pinel

DUNEDIN AGENCY.

District Manager—R. S. McGowan
Chief Clerk—M. J. Heywood
Clerk—A. Marryatt

INVERCARGILL AGENCY.

Agency Clerk—J. Findlay

PUBLIC TRUST OFFICE.

Public Trustee—J. C. Martin
Deputy Public Trustee—A. A. Duncan
Solicitor—F. J. Wilson
Chief Clerk—T. S. Ronaldson
Accountant—M. C. Barnett
Clerk in Charge of Wills, Trusts, &c.—T. Stephens
Examiner—M. Townsend
Clerks—P. Fair, C. Zachariah, P. Hervey, E. C. Reeves, T. D. Kendall, W. A. Fordham, H. Oswin, A. Purdie, G. A. Smyth, A. J. Cross, E. G. Hyde, T. R. Saywell, N. Levien, M. E. Harrap, S. Dimant, J. Skerrett, E. A. Smythe, J. Allen, W. Barr, E. O. Hales, C. Morris, S. W. Smith, J. B. Jack, K. Brown, C. A. Goldsmith, W. Campbell, R. Price
District Agent, Christchurch—J. J. M. Hamilton
District Agent, Auckland—E. F. Warren
District Agent, Dunedin—F. H. Morice
District Agent, Greymouth—J. C. Matheson
District Agent, Napier—E. P. Watkis
West Coast Settlement Reserves Agent—Thomas C. Fisher

ADVANCES TO SETTLERS OFFICE.

Superintendent—John McGowan
Deputy Superintendent—G. F. C. Campbell
Chief Valuers—Auckland, W. Duncan; Wellington, T. K. Macdonald; Christchurch, A. P. O'Callaghan; Invercargill, H. Carswell
Clerks, Head Office—H. Lamb, E. McFadden, W. Waddel, T. C. Somers, W. M. Smith, A. Prichard, J. T. Bolt, H. O'Rourke, J. E. Thompson, C. Wilson, T. W. Foote, A. W. Knowles, H. Redmond, L. A. Treadwell, W. Garrett, C. A. Goldsmith, C. Collins, E. Panting
Clerks at Agencies—Millar, — Walker, Naphtali, E. Holloway, F. B. Robertson

ECCLESIASTICAL.

THERE is no State Church in the colony, nor is State aid given to any form of religion. Government in the early days set aside certain lands as endowments for various religious bodies, but nothing of the kind has been done for many years past.

CHURCH OF THE PROVINCE OF NEW ZEALAND, COMMONLY CALLED THE "CHURCH OF ENGLAND."

Bishops.

The Most Rev. William Garden Cowie, D.D., Auckland; consecrated 1869 (Primate).

The Right Rev. William Leonard Williams, B.A., Waiapu; consecrated 1895.

The Right Rev. Frederic Wallis, D.D., Wellington; consecrated 1895.

The Right Rev. Charles Oliver Mules, M.A., Nelson; consecrated 1892.

The Right Rev. Churchill Julius, D.D., Christchurch; consecrated 1890.

The Right Rev. Samuel Tarratt Nevill, D.D., Dunedin; consecrated 1871.

The Right Rev. Cecil Wilson, M.A., Melanesia; consecrated 1894.

ROMAN CATHOLIC CHURCH.

Archbishop.

The Most Rev. Francis Redwood, S.M., D.D., Archbishop and Metropolitan, Wellington; consecrated 1874.

Bishops.

Bishopric of Auckland vacant. Rev. G. M. Lenihan, Administrator.

The Right Rev. John Joseph Grimes, S.M., D.D., Christchurch; consecrated 1887.

The Right Rev. Dr. Verdon, Dunedin; consecrated 1896.

ANNUAL MEETINGS AND OFFICERS.

The principal present heads or officers of the various churches, and the places and times of holding the annual or periodical assemblies or meetings, are as follow:—

Church of England.—For Church purposes, the colony is divided into six dioceses—viz., Auckland, Waiapu, Wellington, Nelson, Christchurch, and Dunedin. The General Synod meets every third year in one or other of the dioceses.—President, the Bishop of Auckland, Primate; Secretary, Rev. J. P. Kempthorne, Nelson; Lay Secretary, James Allen, Esq., B.A., M.H.R., Dunedin. The Diocesan Synods meet once a year, under the presidency of the Bishop of the diocese. The next General Synod will be held in Christchurch, in February, 1898.

Roman Catholic Church.—The diocese of Wellington, established in 1848, was in 1887 created the metropolitan see. There are three suffragan dioceses—Auckland, Christchurch, and Dunedin. A Retreat is held annually in each of the four dioceses, at the end of which a Synod is held, presided over by the Bishop, and at which all his clergy attend.

Presbyterian Church of New Zealand.—The Assembly meets annually, in February, at Auckland, Wellington, and Christchurch, in succession. Moderator, the Very Rev. William Watt; Clerk and Treasurer, Rev. David Sidey, D.D., Napier.

Presbyterian Church of Otago and Southland.—The Synod meets annually in October at Dunedin. Moderator, Rev. David Borrie, North-east Valley; Clerk, Rev. W. Bannerman, Roslyn, Dunedin; Church Factor, Mr. Frederick Smith, High Street, Dunedin. Theological Professors, Rev. John Dunlop, M.A., DD., and Rev. Michael Watt, M.A., DD. Mr. James Dunbar, Tutor in Greek.

Wesleyan Methodist Church.—The annual Conference meets on or about the 1st March, the exact date being determined by the President, who holds office for one year. Each Conference determines where the next one shall assemble. President (1896–97), Rev. W. Baumber, Wesley Church, Wellington; Secretary, Rev. W. J. Williams, Pitt Street Church, Auckland. The next Conference is to meet in Wesley Church, Wellington.

United Methodist Free Churches.—The Assembly meets annually in February, in Canterbury, Auckland, Wellington, or Hawke's Bay. For 1896 the President is the Rev. A. Peters, Auckland; and the Secretary Mr. J. A. Flesher, Christchurch. [These Churches were united with the Wesleyan Methodist and Bible Christian Churches on the 13th of April, 1896.]

Bible Christians.—A District Meeting of the Connexion is held annually. President, Rev. B. H. Ginger, Addington; Connexional Representative and Treasurer, Rev. J. Orchard, Christchurch; Trust Secretary, Rev. J. G. W. Ellis, Templeton; School and Temperance Secretary, Rev. F. Quintrell, Palmerston North; Editor of Magazine, Rev. W. Grigg, Belfast; Publisher, Rev. B. H. Ginger. [The legal union of the Bible Christian Connexion with the Wesleyan and United Methodist Churches took effect on Monday, 13th April, 1896. The ministers of the denomination are now returned amongst the Wesleyan Methodists, and all the offices cease to exist, with the exception of that held by the Rev. J. Orchard, who still continues to represent the English Conference of the Bible Christian Church.]

Primitive Methodists.—A Conference takes place every January. The next is to be held in Feilding, commencing 6th January, 1897. The Executive Committee of the Church sits in Auckland. The Conference officials for the present year are: President, Rev. James Clover, Waimate, Canterbury; Secretary, Rev. William S. Potter, New Plymouth; Secretary of Executive Committee, Mr. D. Goldie, Auckland.

Baptist Union of New Zealand.—President, Rev. Arthur Dewdney, Oamaru; Secretary, Rev. A. H. Collins, Auckland. The Union comprises 31 churches, 3,095 members, 4,931 scholars in the Sunday schools, with 579 teachers. There are also 101 local preachers, and 24 preaching-stations. This religious body has a newspaper of its own—the *New Zealand Baptist*—published in Christchurch.

Congregational Union of New Zealand.—The annual meetings are held during the second week of February, at such place as may be decided on by vote of the Council. Chairman for 1896, Rev. W. M. Fell, Dunedin; Chairman Elect, Mr. W. H. Lyon, Auckland; Secretary, Mr. J. Bowden, Auckland; Treasurer, Mr. G. Fowlds, Auckland; Registrar, Rev. C. H. Bradbury, Dunedin: Head Office, Auckland. In 1897 the meeting of the Council will be held at Christchurch. The Executive Committee of the Union meets in Auckland on the second Tuesday of each month.

Hebrews.—Ministers: Rev. S. A. Goldstein, Auckland; Rev. Louis J. Harrison, Dunedin; Rev. H. van Staveren, Wellington; Mr. Alexander Singer, Hokitika. Annual meetings of the general Congregations are held at these places on the third Sunday in Elul (about the end of August).

JUDICIAL.

THE Minister of Justice is charged with all matters relating to the Supreme, District, Magistrates', and Wardens' Courts, Crown Law Office, Coroners, patents, designs, and trade-marks, bankruptcy, criminal prosecutions in the higher Courts, Justices of the Peace, Licensing Committees, and prisons. The Supreme Court is presided over by a Chief Justice and four Puisne Judges. The Chief Justice and one Puisne Judge reside in Wellington, one Judge resides at Auckland, one at Christchurch, and one at Dunedin. They all go on circuit periodically within their districts. Circuit sittings of the Supreme Court are held at fourteen places. There are three District Court Judges, holding Courts at seventeen towns. At nearly every town in which sittings of the Supreme or District Courts are held there is a Crown Prosecutor, paid by fees, and a Sheriff. In the District Courts the Crown Prosecutor exercises the function of a Grand Jury.

The Magistrates' Courts are presided over by thirty Stipendiary Magistrates, and Courts are held daily in the principal centres, and at convenient times in the smaller towns. The jurisdiction of these Courts may be "ordinary" (which includes, practically speaking, all claims not exceeding £100 in value, except claims for damages for false imprisonment or illegal arrest, malicious prosecution, libel, slander, seduction, or breach of promise of marriage); "extended," under which money-claims to an amount not exceeding £200 may be entertained; and "special," which, while

including all the powers of the "extended" jurisdiction, enables the Court to deal also with partnerships, injunctions, and other equity suits. At present twenty-eight of the Stipendiary Magistrates exercise the "extended" jurisdiction, but none the "special." When, however, owing to increase of settlement, or pressure of business in the Supreme Court, necessity arises, the power to exercise either the extended or special jurisdiction can be conferred by Order in Council on any Court. The Magistrates exercising the special jurisdiction must be barristers or solicitors.

The procedure of the Courts is remarkably simple, no pleadings being required beyond a statement by the plaintiff sufficient to inform the defendant of the nature and extent of the claim. Due provision is made for counter-claims, and the joinder at any stage of the proceedings of all necessary parties, so that all questions arising in connection with the subject-matter before the Court may be finally dealt with at once. Appeal to the Supreme Court is allowed on points of law, and of law only, in cases where not more than £50 is concerned, and on points of either law or fact in cases above that amount. Generally, the procedure is so simple and elastic that in the majority of cases heard it is not necessary to retain the services of a professional man, but, where solicitors are employed, the Court in its judgment settles the costs to be paid according to a prescribed scale. In places where there is not a Magistrate's Court Justices of the Peace have power to hold a Court and deal with claims not exceeding £20 in value, giving judgment "according to equity and good conscience."

In criminal cases the Supreme or District Court may reserve any question of law for the Court of Appeal; and, if the Court refuse to reserve a question, the Attorney-General may give leave to move the Court of Appeal for leave to appeal.

The Supreme Court may give leave to any person convicted before it to apply to the Court of Appeal for a new trial on the ground that the verdict was against the weight of evidence, and the Court of Appeal may direct a new trial. In cases where the clemency of the Crown is sought, the Governor in Council, if he entertains a doubt whether the convicted person ought to have been convicted, may direct a new trial at such time and before such Court as he may think proper.

Fourteen of the Magistrates are also Wardens, holding Wardens' Courts in the various goldfields. There are fifty civilian Clerks of Courts, and eighty-nine who are also police sergeants or constables.

Every Stipendiary Magistrate holds the office of Coroner, and is paid 10s. 6d. for each inquest, in addition to mileage at 1s. per mile. Besides these, there are thirty-four Coroners, who are paid £1 1s. for each inquest, and mileage.

Bankrupt estates are administered by four Official Assignees, stationed at Auckland, Wellington, Christchurch, and Dunedin, respectively; and by twenty Deputy Assignees, resident at as many other towns. The Supreme and District Courts have jurisdiction

in bankruptcy proceedings, and the Governor has power to confer similar jurisdiction in small estates on any of the Magistrates' Courts, but as yet this has not been found necessary.

The Commission of the Peace contains about seventeen hundred names, and additions are frequently made. A rota is kept in every borough and town of Justices residing within three miles of the Courthouse, and the Justices are required either to attend the Court when summoned or to furnish a satisfactory excuse; failing this, they are struck off the Commission. Medical practitioners, Civil servants, and others are exempt from such attendance.

Witnesses in Criminal Courts are paid 6s. per diem, and in addition 4s. for every night they are absent from home. Witnesses in civil cases are paid variously from 6s. to £1 1s. a day, according to their condition in life.

Intestate estates in New Zealand are dealt with by the Public Trust Office, and are referred to in the article on that institution.

The Attorney-General of the colony is a Cabinet Minister holding other portfolios, but the Solicitor-General is a permanent officer and a member of the Civil Service.

Jury lists are compiled annually by the police, revised by the Bench of Justices, and forwarded to the Sheriffs, who prepare from them special and common jury panels.

DEFENCES, MILITARY AND NAVAL.

The defence forces consist of the Permanent Militia (Artillery and Torpedo Corps), and the auxiliary forces of Volunteers (Cavalry, Mounted Rifles, Naval Artillery, Field Artillery, Engineers, and Rifle companies). There is a Military Adviser and Inspector of these Forces, who is an ex-Imperial officer. To the Under-Secretary for Defence all questions of expenditure are referred; while the Chief Engineer of the Public Works Department has charge of the defence-works.

Militia and Volunteer Districts.

The two islands (North and South) are divided into seven districts, each commanded by a Field Officer of Militia or Volunteers, with a competent staff of drill-sergeants.

Permanent Militia (Artillery).

This Force is divided into four batteries, which are stationed at Auckland, Wellington (head-quarters), Lyttelton, and Dunedin; their principal duties are to look after and take charge of all guns, stores, ammunition, and munitions of war at these four centres. The Force consists of two majors, two captains, one subaltern, with an establishment of 145 of all ranks.

Permanent Militia (Torpedo Corps).

This branch, like the Artillery, is divided amongst the four centres, for submarine and torpedo work, and consists of two captains, with a total establishment of 64 of all ranks. They have charge of four torpedo-boats and four steam-launches, and of all submarine-mining and torpedo stores. They are likewise employed in blowing up rocks and wrecks, and generally improving harbours.

Volunteers.—Cavalry.

There are three troops of Cavalry, one in the North Island and two in the South Island. These corps are kept in a state of efficiency by going into camp for six days' training annually. The total strength of the three troops is 180 of all ranks.

Volunteers.—Mounted Rifles.

There are eleven corps of Mounted Rifles, seven in the North Island and four in the South Island, with a total strength of 547 of all ranks. These corps go into camp for an annual training of six days.

Volunteers.—Naval Artillery.

There are fifteen batteries of this branch of the service, eight in the North Island and seven in the South Island, having a total strength of 1,087 of all ranks. These corps are divided into port and starboard watches; one watch is trained to assist the Permanent Artillery in working heavy ordnance, the other in submarine and torpedo work, as auxiliaries to the Torpedo Corps. These corps have cutters and other boats provided and kept up for them, and are instructed in rowing, knotting, splicing, signalling, and such-like duties.

Volunteers.—Garrison Artillery.

There is one corps of Garrison Artillery in the South Island, with a strength of 50 of all ranks.

Volunteers.—Field Artillery.

There are nine batteries of Field Artillery, three in the North Island and six in the South Island, with a total of 514 of all ranks. They are armed with 6-, 9-, and 12-pounder Armstrong breech-loading rifled guns and 6-pounder Nordenfeldts, on field-carriages.

Volunteers.—Engineers.

This branch consists of two corps, with a total of 146 of all ranks, both in the South Island. Besides carrying rifles they are provided with entrenching tools and all appliances for blowing up bridges or laying land-mines.

Volunteers.—Rifle Corps.

In this branch of the service there are forty-six corps (including one honorary reserve), fourteen being in the North Island and thirty-two in the South Island, with a total strength of 2,845 of all ranks, including garrison bands.

Volunteers.—Cadet Corps.

There is a force of thirty-nine cadet corps—viz., eleven in the North Island and twenty-eight in the South Island, with a total strength of 2,139 of all ranks.

Ordnance, Arms, etc.

The armament at the forts of the four centres consists of 8in. 13-ton breech-loading rifled Elswick Ordnance Company's guns, with 6in. 5-ton, of like pattern, all mounted on hydro-pneumatic disappearing carriages; 7in. 7-ton muzzle-loading rifled guns, on traversing slides; 64-pounder rifled muzzle-loading converted 71cwt. guns, on garrison standing carriages and traversing slides; 64-pounder rifled muzzle-loading 64cwt. guns on traversing slides; 6-pounder quick-firing Nordenfeldts, on garrison pillar-mountings, and field-carriages; and Hotchkiss and Maxim quick-firing guns. The Volunteer Field Artillery are armed with 6-, 9-, and 12-pounder Armstrong breech-loading rifled guns, and 6-pounder Nordenfeldts, and the whole of the adult portion of the Force have carbines or rifles of Martini-Henry pattern; Cadets being armed with Snider carbines.

There is a large stock of Whitehead torpedoes, contact- and ground-mines, in charge of the Torpedo Corps, as well as four Thorneycroft torpedo-boats.

Enrolment, etc.

Members of the Permanent Militia are enrolled for three years' service, and Volunteers for one year. The Permanent Militia is recruited from men who have one year's efficient service in the Volunteers; and after passing the gunnery and other courses in the Permanent Militia the men are eligible for transfer to police and prison service.

Instructors.

The Instructors for Permanent Artillery and Torpedo Corps are obtained from the School of Gunnery at Shoeburyness, and from the Royal Engineers, under a three years' engagement, on completion of which they return to their regiments.

Capitation.

An annual capitation of £2 10s. is granted to each efficient Volunteer, and a sum not exceeding £20 to each efficient cadet corps. One hundred and fifty rounds of Martini-Henry ball-cartridge are issued each year free to every adult Volunteer, and twenty-five rounds of Snider ball to each cadet over thirteen years of age.

Administration.

The defence forces of New Zealand are administered under "The Defence Act, 1886."

Expenditure on the Establishment and Maintenance of Defences from 1884–85 to 1895–96.

Year.	Military Expenditure.	Harbour Defences.	Total.
	£	£	£
1884–85	90,816	9,601	100,417
1885–86	91,242	127,167	218,409
1886–87	89,927	139,429	229,356
1887–88	122,061	73,458	195,519
1888–89	53,591	50,089	103,680
1889–90	63,614	15,752	79,366
1890–91	80,891	10,798	91,689
1891–92	75,343	7,644	82,987
1892–93	59,808	11,205	71,013
1893–94	56,570	3,976	60,546
1894–95	62,181	2,495	64,676
1895–96	84,981	3,314	88,295

LIGHTHOUSES.

The coasts of New Zealand are, considering their extent, fairly well lighted, but there are many places where lights are still required. Additions to the existing lights are made from time to time as funds are available.

There are twenty-seven coastal lights altogether—eight of the first order, thirteen of the second, three of the third, and three of smaller orders.

There has been no special difficulty in the erection of lighthouses in New Zealand, apart from the trouble caused by indifferent landings. There are no lighthouses built in the sea, such as the well-known Eddystone or Bell Rock. That on The Brothers is the only one which it is considered necessary to keep as a rock-station: that is, the keepers are relieved from time to time, three being always at the station and one on shore.

The cost of the erection of the lighthouses is given by the Marine Department as upwards of £167,651 (the Ponui Passage Lighthouse, having been built by the Provincial Government of Auckland, the cost is not given). The annual consumption of oil is about 19,000 gallons; and the cost of maintenance, irrespective of the cost of maintaining the lighthouse steamer, is about £12,500 a year.

Besides the coastal lighthouses, there are harbour-lights at most of the ports of the colony for the guidance of vessels into and out of the ports.

The following table shows the names of the lighthouses, indicating also their situation, the order of apparatus, description, period (in seconds) and colour of the lights, and of what material the respective towers are built:—

Name of Lighthouse.	Order of Apparatus.	Description.	Period of Revolving Light, in	Colour of Light.	Tower built of.
	Dioptric.		Seconds.		
Cape Maria van Diemen	1st order ..	Revolving	60	White	Timber.
	..	Fixed ..	..	Red, to show over Columbia Reef	
Moko Hinou ..	1st „ ..	Flashing	10	White	Stone.
Tiri-Tiri (Auckland)	2nd „ ..	Fixed ..	..	White, with red arc over Flat Rock	Iron.
Ponui Passage..	5th „ ..	„ ..	..	White and red ..	Timber.
Cuvier Island ..	1st „ ..	Revolving	30	White	Iron.
Portland Island	2nd „ ..	„	30	„ ..	Timber.
	..	Fixed ..	..	Red, to show over Bull Rock	
Pencarrow Head	2nd „ ..	„ ..	..	White	Iron.
Cape Egmont ..	2nd „ ..	„ ..	..	„	„
Manukau Head	3rd „ ..	„ ..	..	„	Timber.
Kaipara Head ..	2nd „ ..	Flashing	10	„	„
Brothers (in Cook Strait)	2nd „ ..	„	10	„ ..	„
	..	Fixed ..	..	Red, to show over Cook Rock	
Cape Campbell	2nd „ ..	Revolving	60	White	„
Godley Head (Lyttelton)	2nd „ ..	Fixed ..	..	„	Stone.
Akaroa Head ..	2nd „ ..	Flashing	10	„	Timber.
Moeraki ..	3rd „ ..	Fixed ..	..	„	„
Taiaroa Head ..	3rd „ ..	„ ..	..	Red	Stone.
Cape Saunders..	2nd „ ..	Revolving	60	White	Timber.
Nugget Point ..	1st „ ..	Fixed ..	..	„	Stone.
Waipapapa Point	2nd „ ..	Flashing	10	„	Timber.
	Catadioptric.				
Dog Island ..	1st order ..	Revolving	30	„	Stone.
	Dioptric.				
Centre Island ..	1st order ..	Fixed ..	..	White, with red arcs over inshore dangers	Timber.
Puysegur Point	1st „ ..	Flashing	10	White	„
Cape Foulwind	2nd „ ..	Revolving	30	„	„
Farewell Spit ..	2nd „ ..	„	60	White, with red arc over Spit end	„
Nelson ..	4th „ ..	Fixed ..	..	White, with red arc to mark limit of anchorage	Iron.
French Pass ..	6th „ ..	„ ..	..	Red and white, with white light on beacon	„
Stephens Island	1st „	Group flashing	30	White	„

DÉPÔTS FOR SHIPWRECKED MARINERS.

As eleven of the crew of the barque "Spirit of the Dawn," which was wrecked on Antipodes Island on the 4th September, 1893, remained on the island for eighty-eight days without becoming aware of the existence of the dépôt of provisions and clothing for castaways which is established there, attention may usefully be drawn to the fact that such dépôts are maintained by the New Zealand Government on that island, and on the Auckland, Campbell, Bounty, Kermadec, and Snares Islands.

The following are the positions of the dépôts :—

Auckland Islands.—A dépôt is placed on the south side of Erebus Cove, Port Ross, and another in Camp Cove, Carnley Harbour, and a third at the head of Norman Inlet. One boat is placed on the north-west end of Adams Island, another on Enderby Island, and another on Rose Island.

Campbell Island.—A dépôt is erected in Tucker Cove, Perseverance Harbour, and a boat has been placed at the head of that harbour.

Antipodes Islands.—A dépôt is placed abreast the anchorage on the north-east side of the principal island.

Bounty Islands.—There is a dépôt on the principal island.

Snares Island.—A dépôt has been established on this island in Boat Harbour.

Kermadec Islands.—A dépôt is established on Macaulay Island, near Lava Cascade, on the north-east end of the island, and another on Curtis Island, at the head of Macdonald Cove, on the north-western end of the island.

Finger-posts to indicate the direction of the dépôts have also been put up.

The Government steamer visits the Auckland, Campbell, Antipodes, Bounty, and Snares Islands twice a year, and the Kermadec Islands once a year.

GRAVING DOCKS AND PATENT SLIPS.

VESSELS visiting New Zealand, and requiring docking or repairs, will find ample accommodation at the principal ports of the colony.

There are in New Zealand four graving-docks; two of these are situated in Auckland, one at Lyttelton, and one at Port Chalmers.

AUCKLAND DOCKS.

The dimensions of the docks at Auckland are as follow:—

	Calliope Dock.	Auckland Dock.
Length over all	525 feet.	312 feet.
Length on floor	500 "	300 "
Breadth over all	110 "	65 "
Breadth on floor	40 "	42 "
Breadth at entrance	80 "	43 "
Depth of water on sill at high water (ordinary spring tides)	33 "	13½ "

The scale of charges for the use or intended use of the Auckland or Calliope Graving Docks, or the materials therein, or connected therewith, is—

Auckland Graving Dock.	£	s.	d.
For every entrance fee	1	1	0
For every vessel of 100 tons (gross register), or under, per day	4	0	0
" vessel over 100 tons (gross register), for first 100 tons	4	0	0
" additional ton (gross register)	0	0	2
For two or more vessels docking at the same time, the tonnage of which together does not exceed 100 tons (gross register), per day each	2	10	0

For shores cut in docking or hanging the vessel, there must be paid, according to injury done, such amount as may be fixed by the Dock-master.

For use of steam-kiln, 10s. per day.

For use of pitch furnace, 10s. per day.

Calliope Graving Dock.	£	s.	d.
For every entrance fee	5	5	0
For all vessels up to 300 tons (gross register)	20	0	0
For all vessels 301 to 400 tons "	22	10	0
" 401 to 500 tons "	25	0	0
" 501 to 600 tons "	27	10	0
" 601 to 700 tons "	30	0	0
" 701 to 800 tons "	32	10	0
" 801 to 900 tons "	35	0	0
" 901 to 1,000 tons "	37	10	0
" 1,001 to 1,100 tons "	40	0	0
" 1,101 to 1,200 tons "	45	0	0
" 1,201 to 1,300 tons "	50	0	0
" 1,301 to 1,500 tons "	55	0	0
" 1,501 to 2,000 tons "	60	0	0
" 2,001 to 3,000 tons "	65	0	0
" 3,001 to 4,000 tons "	70	0	0
" 4,001 to 5,000 tons "	75	0	0

The foregoing charges are for three days or less. After the third day in dock the following rates are charged:—

For all vessels up to 500 tons (gross register), 4d. per ton a day.

For all vessels of 501 tons to 1,000 tons (gross register), 3d. per ton a day.

For all vessels over 1,001 tons up to 2,000 tons (gross register), 2½d. per ton a day.

For all vessels over 2,001 tons (gross register) and upwards, 2d. per ton a day.

Twenty per cent. reduction on Calliope Dock rates is allowed when two or three vessels can arrange to dock on the same tide, and remain in dock the same number of hours; but such reduction is not allowed if any of the Auckland Harbour Board's vessels are docked at the same time as another vessel.

For shores cut in docking or hanging the vessel, there is to be paid, according to injury done, such amount as may be fixed by the Dock-master.

During the year 1895, 93 vessels of various descriptions, varying from 17 to 1,465 tonnage, made use of the Auckland Graving Dock for repairs or painting.

The Calliope Dock was used by the war steamers "Buzzard," 1,580 tons; "Falke," 1,580; "Karrakatta," 1,500; "Ringarooma" (twice), 2,500; the merchant steamers "Hawke's Bay," 4,583 tons;

and "Indra," 3,582; the "Rathdown," sailing-ship, 2,145 tons; and a steam-dredger, 394 tons.

Lyttelton Dock and Patent Slip.

The graving-dock at Lyttelton, which is the property of the Harbour Board, is capable of docking a first-class ironclad, or any of the large ocean-steamers now running to the colony; its general dimensions are: Length over all, 503ft.; length on floor, 450ft.; breadth over all, 82ft.; breadth on floor, 46ft.; breadth at entrance, 62ft.; breadth where ship's bilge would be, 54ft.; depth of water on sill at high-water springs, 23ft.

The scale of charges for the use of the dock and pumping machinery are as follow:—

	£	s.	d.
For all vessels up to 300 tons, for four days or less ..	20	0	0
" 301 to 400 tons, " ..	22	10	0
" 401 to 500 tons, " ..	25	0	0
" 501 to 600 tons, " ..	27	10	0
" 601 to 700 tons, " ..	30	0	0
" 701 to 800 tons, " ..	32	10	0
" 801 to 900 tons, " ..	35	0	0
" 901 to 1,000 tons, " ..	37	10	0
" 1,001 to 1,100 tons, " ..	40	0	0
" 1,101 to 1,200 tons, " ..	45	0	0
" 1,201 tons and upwards, " ..	50	0	0

After the fourth day in dock, the following rates are charged:—

For all vessels up to 500 tons	4d. per ton per day.
For all vessels of 501 tons to 1,000 tons ..	3d. "
For all vessels over 1,001 tons up to 2,000 tons ..	2¾d. "
" 2,001 tons up to 3,000 tons ..	2½d. "
" 3,001 tons up to 4,000 tons ..	2¼ "
" 4,001 tons up to 5,000 tons ..	2d. "

Twenty per cent. reduction on the above rates is allowed when two or three vessels can arrange to dock on the same tide and remain in dock the same number of hours. Two vessels of 1,000 tons each can be docked at the same time. The 20-per-cent. rebate is not allowed if any of the Lyttelton Harbour Board's vessels are docked at the same time as another vessel. The twenty-four hours constituting the first day of docking commences from the time of the dock being pumped out.

Any vessel belonging to H.M. Navy or any colonial Government, or any commissioned ship belonging to any foreign nation, is admitted into the graving dock without payment of the usual dock dues, but is charged only such sum as is necessary for the reimbursement of actual expenditure of stores, wages, and materials.

There are electric lights, one on each side of the graving-dock; and there is a workshop alongside the dock, and several other places within a short distance of it, where repairs and heavy foundry-work can be done.

The graving dock and machinery cost £105,000. The interest and sinking fund on that sum, at 6½ per cent., amounts to £6,825 per annum. Since its construction, the dock dues for the thirteen years, ended 31st December, 1895, amounted to £10,321 9s. 2d., and the working expenses to £7,508 10s. 5d., leaving a credit balance for thirteen years, ended 31st December, 1895, of £2,812 18s. 9d.

During the year 1895 fifteen vessels were docked, the aggregate

tonnage being 23,474, and the dock dues amounted to £648 9s. 6d. For the thirteen years ending 1895 244 vessels were docked.

Alongside the graving dock is a patent slip, with a cradle 150ft. in length, suitable for vessels of 300 tons. It belongs to the Harbour Board.

Port Chalmers Dock.

The dock at Port Chalmers is vested in the Otago Dock Trust, a body entirely distinct from the Otago Harbour Board. Vessels of large size can be taken in the Otago Dock, as the following measurements will show:—

Length over all	335 feet.
Length on the floor	328 "
Breadth over all	68 "
Breadth on floor	41 "
Breadth where ship's bilge will be	43 "
Breadth at dock gates	50 "
Depth of water on sill at high-water ordinary tides ..	17½ "

Connected with the Otago Dock are a large machine-shop, steam-hammer, and forge, with all the appliances necessary for performing any work that may be required by vessels visiting the port. An 80-ton sheer-legs has also recently been erected for heavy lifts.

There is also a patent slip, used for taking up small vessels.

Wellington Patent Slip.

The Port of Wellington has no dock; but there is a well-equipped patent slip at Evans Bay, on which vessels of 2,000 tons can be safely hauled up. This slip is the property of a private company, and is in no way connected with the Harbour Board. It is 1,070ft. long, with a cradle 260ft. in length. There is a depth of 32ft. at high water at the outer end of the slip. A dolphin and buoys are laid down for swinging ships in Evans Bay.

The company has convenient workshops, which contain machinery necessary for effecting all ordinary repairs to vessels using the slip.

During the year ending 31st March, 1896, there were 101 vessels of various sizes taken up on the slip for repairs, cleaning, painting, &c., of an aggregate tonnage of 31,000 tons. The scale of charges has been fixed by the company at very low rates for vessels of under 100 tons register, with a view of encouraging coastal traffic, and for vessels above that size the rates are 1s. per ton on the gross tonnage for the first full twenty-four hours, and 6d. per ton per day afterwards, unless by special agreement.

Timaru Slip.

The Timaru slip is capable of taking up a vessel of 200 tons.

Nelson Cradle.

The Anchor Steamship Company's cradle can take up a vessel of 150 tons.

ANNUAL PENSIONS

PAID BY THE GOVERNMENT OF NEW ZEALAND, AS ON 31ST MARCH, 1896.

[By an Act passed in 1871 the pension system was abolished in New Zealand. In 1893 the Civil Service Insurance Act was passed, the main provisions of which are described at the end of this table.]

Name.	Date from which Pension commenced.	Amount.			Name.	Date from which Pension commenced.	Amount.		
Under "The Civil Service Act, 1866."		£	s.	d.	*Under "The Civil Service Act, 1866"*—ctd.		£	s.	d.
Allan, A. S. ..	1 Sept., 1888	195	5	0	Graham, G. H. ..	8 Sep., 1891	52	10	0
Arrow, H. ..	1 Aug., 1881	26	0	0	Gregory, J. ..	16 Feb., 1881	53	6	8
Aubrey, H. R. ..	1 Nov., 1880	223	0	0	Greenway, J. H. ..	1 Nov., 1891	116	16	0
Austin, A. D. ..	1 Oct., 1887	247	10	0	Giles, J. ..	1 Feb., 1894	238	6	8
Anderson, J. G. ..	6 Jan., 1896	261	18	1	Halliday, C. ..	31 Aug., 1886	96	13	4
Baddeley, H. C. ..	12 Jan., 1888	225	0	0	Hamilton, M. ..	11 July, 1880	200	0	0
Bailie, F. ..	1 Feb., 1893	77	8	8	Harsant, W. ..	11 June, 1878	151	13	4
Baker, E. ..	1 Nov., 1880	214	17	1	Hart, J. T. ..	12 Nov., 1890	193	7	0
Barnard, W. H. ..	1 June, 1880	101	18	1	Hartwright, H. ..	1 Jan., 1886	152	7	8
Barr, A. ..	1 Oct., 1888	366	13	4	Heddell, P. ..	17 Oct., 1894	90	0	0
Batkin, C. T. ..	1 April, 1890	533	6	0	Henn, J. ..	1 April, 1893	88	3	4
Bertrand, J. R. ..	17 Feb., 1895	135	0	0	Hill, C. J. ..	9 Feb., 1895	72	0	0
Bicknell, F. ..	1 Feb., 1882	96	13	4	Hill, E. ..	13 Sep., 1871	100	0	0
Blomfield, J. ..	21 Mar., 1889	101	15	0	Holden, T. ..	13 Oct., 1878	31	5	0
Bridson, W. ..	1 Aug., 1893	146	8	7	Jackman, S. J. ..	1 May, 1892	149	6	8
Brown, W. R. E.	1 Aug., 1892	265	16	8	Johnston, D. ..	15 Dec., 1880	366	13	4
Buchanan, J. ..	1 July, 1886	127	13	6	Judd, A. ..	1 April, 1887	173	6	8
Bull, E. ..	1 July, 1887	105	14	3	Keetley, E. ..	1 July, 1884	18	12	10
Burgess, A. ..	1 June, 1886	116	13	4	Kelly, J. D. ..	1 July, 1891	130	19	0
Burn, J. F. ..	1 July, 1887	51	0	0	Kissling, T. ..	1 Jan., 1894	317	5	2
Butts, E. D. ..	1 April, 1893	258	6	8	Laing, E. B. ..	1 April, 1887	112	10	0
Campbell, F. E. ..	1 Mar., 1890	466	13	0	Laing, W. ..	1 Feb., 1896	212	10	0
Carrington, O. ..	1 Feb., 1878	300	0	0	Lang, A. ..	1 Feb., 1893	75	15	3
Chapman, R. ..	1 Jan., 1868	255	19	0	Lemon, C. ..	1 Mar., 1895	350	0	0
Cheeseman, G. H.	1 Mar., 1893	82	10	0	Lincoln, R. S. ..	1 Mar., 1889	68	17	0
Cheesman, W. F.	1 April, 1890	154	15	1	Lockwood, W. H.	1 Jan., 1880	22	18	4
Clarke, H. T. ..	1 Jan., 1879	400	0	0	Lodge, W. F. ..	1 Oct., 1881	185	0	0
Clarke, H. ..	1 Oct., 1879	98	13	0	Lundon, D. ..	1 May, 1892	210	0	0
Cook, R. C. ..	1 Sept., 1895	160	14	3	Lusher, R. A. ..	31 Aug., 1880	76	16	8
Cooper, G. S. ..	1 Aug., 1892	533	6	8	Meikle, A. M. ..	1 May, 1887	145	14	3
Costall, J. ..	10 July, 1892	131	3	10	Mills, W. ..	23 Sept., 1875	385	14	4
Creeke, W. ..	1 April, 1891	52	15	8	Mitford, G. M. ..	1 Feb., 1869	196	15	0
Crowe, A. ..	31 Dec., 1885	68	12	3	Monson, J. R. ..	1 Oct., 1882	271	16	0
Culpan, W. ..	1 Dec., 1868	62	10	0	Monro, H. A. H. ..	1 Nov., 1880	342	17	2
Cunningham, J. ..	1 Feb., 1888	175	0	0	Morpeth, W. J. ..	4 Aug., 1894	195	4	9
DeCastro, C. D.	1 Mar., 1892	172	10	0	Morrow, H. ..	1 June, 1890	120	16	8
Dick, S. J. ..	1 Feb., 1893	250	0	0	Macarthur, J. ..	1 Jan., 1876	65	0	0
Dickey, A. J. ..	1 Nov., 1875	122	0	5	McCulloch, H. ..	1 Aug., 1890	233	0	0
Earle, J. ..	13 Nov. 1888	104	10	0	MacDonnell, R. T.	23 July, 1890	150	0	0
Eliott, G. E. ..	30 Nov., 1872	400	0	0	McKellar, H. S. ..	1 Aug., 1892	433	6	8
Ensor, J. ..	1 Feb., 1893	51	6	8	Norris, E. F. ..	1 Oct., 1895	88	17	9
Falck, F. ..	1 Mar., 1893	125	13	4	O'Connor, R. ..	1 Sept., 1892	147	0	6
Fenton, F. D. ..	3 Nov., 1881	630	19	0	Parker, T. W. ..	1 June, 1881	242	3	9
Freeth, J. J. ..	1 Mar., 1894	116	13	4	Parris, R. ..	1 Jan., 1877	314	5	8
Gill, R. J. ..	1 Sep., 1886	228	11	5	Pauling, G. W. ..	1 Feb., 1887	91	1	5
Gisborne, W. ..	1 Oct., 1876	466	13	4	Pearson, W. H. ..	30 Sept., 1884	340	9	6

ANNUAL PENSIONS—*continued.*

Name.	Date from which Pension commenced.	Amount.		
Under "The Civil Service Act, 1866"—continued.		£	s.	d.
Phillips, W. M. ..	1 Dec., 1894	69	4	5
Pickett, R. ..	1 Aug., 1866	209	10	6
Pinwill, A. ..	1 July, 1891	120	17	0
Pitt, H. ..	1 May, 1881	100	0	0
Plimpton, R. E. E.	4 Dec., 1883	110	14	3
Pollen, D. ..	30 Oct., 1876	418	15	0
Powell, D. ..	1 July, 1893	44	1	8
Rawson, C. E. ..	1 Dec., 1895	244	0	11
Rennell, W ..	1 Dec., 1895	167	18	4
Rich, E. F. ..	1 June, 1892	217	0	0
Robertson, J. ..	6 Oct., 1892	155	0	0
Rodgerson, W. J.	1 July, 1892	248	6	8
Rogan, J. ..	1 Jan., 1878	466	13	4
Rough, D. ..	1 May, 1868	277	1	8
Rowe, C. ..	1 Oct., 1894	109	16	0
Searancke, W. N.	1 Feb., 1879	240	0	0
Sheath, A. B. ..	31 Mar., 1880	129	9	0
Shrimpton, J. ..	16 July, 1889	146	14	0
Sinclair, A. ..	1 June, 1878	195	0	0
Smith, J. ..	1 June, 1894	49	5	6
Smith, J. E. ..	1 July, 1877	484	11	6
Smith, T. H. ..	1 July, 1876	371	8	7
Snoswell, T. ..	5 Dec., 1891	83	14	0
Snow, C. H. ..	1 Dec., 1887	157	10	0
Stevens, F. ..	1 Dec., 1892	183	0	0
Stewart, J. T. ..	1 May, 1889	300	0	0
Taylor, G. ..	1 Mar., 1893	121	0	0
Thomas, G. W. ..	1 Nov., 1875	38	15	0
Thompson, R. ..	1 Mar., 1896	220	0	0
Tidmarsh, W. ..	1 Aug., 1867	69	7	3
Tizard, E. F. ..	1 July, 1888	180	19	0
Tovey, J. H. ..	1 April, 1895	77	0	10
Tucker, W. ..	31 Dec., 1880	104	13	4
Veal, J. ..	1 Sept., 1885	49	15	3
Veale, J. S. ..	1 Sept., 1887	56	2	10
Von Sturmer, S...	1 July, 1895	288	1	11
Wardell, H. S. ..	1 July, 1888	366	13	0

Name.	Date from which Pension commenced.	Amount.		
Under "The Civil Service Act, 1866"—continued.		£	s.	d.
Watson, R. ..	1 Oct., 1892	145	0	0
White, W. ..	1 July, 1881	36	5	0
White, W. B. ..	1 July, 1873	375	4	9
Wilkin, J. T. W...	1 Feb., 1874	127	19	4
Willcocks, E. S. ..	1 Nov., 1880	250	0	0
Williams, E. M. ..	1 April, 1880	135	0	0
Wilson, W. W. ..	1 Feb., 1881	100	14	3
Woon, J. G. ..	1 July, 1892	209	10	6
Wrigg, H. C. W...	1 Aug., 1889	157	2	10
Under "The Hamerton Pension Act, 1891."				
Hamerton, R. C.	11 Sept., 1891	250	0	0
Under "The Meredith and Others Pensions Act, 1870."				
Collins, Mary ..	13 Nov., 1869	65	0	0
Hamlin, Rhoda B.	1865	50	0	0
Under "The Military Pensions Act, 1865."				
Arapera te Reo..	1 July, 1870	20	0	0
Brown, M. R. ..	..	75	0	0
Buck, Cath. M...	..	70	0	0
Hastings, L. ..	..	55	0	0
Iritona, Hanita..	8 Nov., 1868	12	0	0
Marara, Ngakoa	3 Dec., 1860	36	0	0
McDonald, E. ..	..	36	0	0
Morrison, Ann ..	26 Oct., 1865	36	0	0
Russell, C. ..	..	36	0	0
Von Tempsky, A.	3 Oct., 1868	120	0	0
Adamson, T. ..	[a]	0	2	2*
Beamish, J. G...	[b]	0	1	6*
Corbett, George	[c]	0	2	0*
Crawford, C. F.	..	0	2	0*
Crosby, H. ..	[d]	0	2	0*
Dore, G. H. ..	[e]	0	2	0*
Gibbons, M. C...	12 Oct., 1869	0	2	2*
Hamblyn, J. ..	1 Oct., 1872	0	2	2*
Hope, E. L. ..	[f]	0	1	6*

* Per diem.

[a] 1s. 6d. from 25th October, 1869; increased to 2s. 2d., 7th December, 1870.

[b] 1s. from 17th December, 1868, to 17th December, 1869; 1s. 6d. from 17th December, 1869, to 17th December, 1870; 8d. from 17th December, 1870, to 30th September, 1874; increased to 1s. 6d., 1st October, 1874.

[c] 2s. from 5th June, 1867, to 5th June, 1868; 2s. from 5th June, 1868, to 5th June, 1869; permanent from 9th November, 1869.

[d] 2s. for two years, from 9th April, 1870; renewed for twelve months; again renewed for twelve months; permanent from 1st May, 1874.

[e] 2s. from 1st January, 1869, for eighteen months; permanent from 18th May, 1872.

[f] 1s. 6d. for twelve months, from 26th April, 1869; renewed for twelve months, 1870; renewed for twelve months, 1871; permanent from 12th May, 1872.

ANNUAL PENSIONS—*continued.*

Name.	Date from which Pension commenced.	Amount.		
Under "The Military Pensions Act, 1866"—continued.		£	s.	d.
Kelly, T. ..	9 April, 1870	0	2	2*
Kershaw, P. ..	9 Aug., 1869	0	1	6*
Lacey, Garrett ..	..	0	2	2*
Lake, T. ..	..	0	2	6*
Lloyd, T. ..	(g)	0	2	0*
McDonnell, W...	..	150	0	0
McKay, G. ..	..	0	1	0*
McMahon, T. ..	(h)	0	2	0*
Monck, J. B. ..	1 April, '72 (i)	0	1	0*
Ross, Edward O.	17 Nov., 1866	75	0	0
Shanaghan, J. ..	..	0	1	6*
Shepherd, R. ..	(k)	0	2	8*
Timms, W. ..	(l)	0	1	6*
Tuffin, G. ..	..	0	2	2*
Vance, R. ..	8 April, 1870	0	2	2*
Walsh, W. ..	15 Nov., 1866	0	1	6*
Wasley, Edw. O.	(m)	0	2	2*
Williamson, F. ..	1 June, 1869	0	2	0*
Anaru Patapu ..	14 May, 1865	0	0	9*
Apera te Keunga	14 May, 1864	0	2	6*
Karena Ruatani-wha	1 July, 1870	0	1	0*
Matiu Whitiki ..	1 April, 1885	0	0	6*
Mauparoa ..	1 July, 1867	0	1	0*
Mehaka Kepa ..	2 Aug., 1865	0	0	9*
Pera Taitimu ..	12 Oct., 1869	0	1	0*
Raniera Ngoto ..	1 Oct., 1884	0	0	6*

Name.	Date from which Pension commenced.	Amount.		
Under "The Walsh and Other Pensions Act, 1869."		£	s.	d.
Hewett, Ellen A.	10 Feb., 1865	50	0	0
Under "The Militia Act Amendment Act, 1862."				
Bending, W. ..	..	0	2	0*
Bilton, F. ..	..	0	2	0*
Cody, W. ..	..	0	1	0*
Dunn, A. J. N. ..	..	0	2	0*
King, E. M. ..	..	80	0	0
Leaf, R. ..	(n)	0	0	6*
Oxenham, W. ..	..	0	1	6*
Sarten, Lucy ..	1864	0	2	0*
Skinner, W. H...	..	0	2	6*
Vickery, W. ..	..	0	2	0*
Woolfe, T. ..	..	0	2	0*
Under "The Schafer, McGuire, and Others Pensions Act, 1872."				
McGuire, E. ..	29 Sept., 1871	0	1	0*
Russell, W. ..	1 July, 1871	0	1	0*
Schafer, C. ..	1 July, 1871	30	0	0
Under "The Supreme Court Judges Act, 1874."				
Gresson, H. B. ..	1 April, 1875	750	0	0

* Per diem.

(g) 2nd October, 1869; ceased on 9th April, 1870; renewed, 22nd April, 1874.

(h) 1s. 6d. from —, 1867; increased to 2s. from 14th February, 1868.

(i) 1s. 6d. for twelve months, from 15th March, 1869; 1s. for twelve months, from March, 1870; 1s. for twelve months, from March, 1871; permanent from 1st April, 1872.

(k) 3s. for twelve months, from 9th April, 1870; 2s. 8d., permanent, from 1st May, 1871.

(l) 1s. 6d. for twelve months, from 18th October, 1869; 1s. 6d. for twelve months, from October 1870; permanent from 5th November, 1871.

(m) 1s. 6d. for eight months, from 20th September, 1869; 2s. 2d. for twelve months, from 11th June, 1870; 2s. 2d. for twelve months, from 11th June, 1871; 2s. 2d. from 11th June, 1872; permanent from 12th June, 1873.

(n) 1s. from 10th May, 1865; renewed for twelve months, April, 1866; again renewed for twelve months; 8d. for twelve months, from 1868, to 10th May, 1869; 6d. for twelve months, from May, 1869; permanent from 11th May, 1870.

"THE CIVIL SERVICE INSURANCE ACT, 1893."

It is provided by the above-named Act that every person appointed to the Civil Service under "The Civil Service Reform Act, 1886," or afterwards, shall retire at the age of sixty years; but the Governor in Council may, nevertheless, require any officer who has attained such age to continue to perform his duties, unless unfitted by reason of ill-health or other cause.

Every officer appointed after the passing of this Act is required to effect a policy with the Government Life Insurance Commissioner (on his life), providing for the following combined benefits:—

(1.) The payment of a sum of money on the death of such officer, should it occur before he attains the age of sixty years; and

(2.) The payment to such officer of an annuity until death should he survive the age of sixty years.

The premiums are paid in the form of deductions from the salaries of officers effecting policies according to the following schedule. The policies and moneys secured thereby are not assignable, and cannot be charged or attached.

There are provisions for payment of surrender value of policies to officers whose services are dispensed with, or who voluntarily leave the Service.

ANNUAL DEDUCTIONS FOR POLICIES.

	£ s. d.		£ s. d.
Under £150 ..	.. 5 0 0	£500 and under £550	.. 25 0 0
£150 and under £200	.. 7 10 0	£550 „ £600	.. 27 10 0
£200 „ £250	.. 10 0 0	£600 „ £650	.. 30 0 0
£250 „ £300	.. 12 10 0	£650 „ £700	.. 32 10 0
£300 „ £350	.. 15 0 0	£700 „ £750	.. 35 0 0
£350 „ £400	.. 17 10 0	£750 „ £800	.. 37 10 0
£400 „ £450	.. 20 0 0	£800	.. 40 0 0
£450 „ £500	.. 22 10 0		

THE CUSTOMS TARIFF OF NEW ZEALAND,

Under the Customs and Excise Duties Acts, 1888 and 1895, and "The Tobacco Excise Duties Act, 1896."

TABLE OF DUTIES.

THE headings of the respective classes in this Table and in the Table of Exemptions are used solely for convenience of classification, and shall not in any way affect the articles specified therein, or be construed to indicate the material of which any such article is made.

The word "iron" includes steel, or steel and iron combined.

Neither steam-engines, nor parts of steam-engines, nor steam-boilers (land or marine) are included in the expression "machines" or "machinery" in either this Table or the Table of Exemptions.

The abbreviation "n.o.e." means not otherwise enumerated.

Class I.—Foods and Articles for Human Consumption.

Names of Articles and Rates of Duty.

1. Almonds, in the shell, 2d. the lb.
2. Almonds, shelled, n.o.e., 3d. the lb.
3. Bacon and hams, 2d. the lb.
4. Biscuits, ships', plain and unsweetened, 3s. the cwt.
5. Biscuits, other kinds, 2d. the lb.
6. Boiled sugars, comfits, lozenges, Scotch mixtures, and sugar-candy, 2d. the lb., including internal packages.
7. Candied peel and drained peel, 3d. the lb.
8. Capers, caraway seeds, catsup, cayenne pepper, chillies, chutney, curry-powder and -paste, fish-paste, gelatine, isinglass, liquorice, olives, 20 per cent. *ad valorem.*
9. Chocolate confectionery, and all preparations of chocolate or cocoa—
   In plain trade packages, 3d. the lb.
   In fancy packages, or in small packages for retail sale, 20 per cent. *ad valorem.*
10. Confectionery, n.o.e., 2d. the lb., including internal packages.
11. Fish, dried, pickled, or salted, n.o.e., 10s. the cwt.
12. Fish, potted and preserved, 2d. the lb. or package of that reputed weight, and so in proportion for packages of greater or less reputed weight.
13. Fruit, fresh, viz.:—
    Apples, pears, plums, cherries, peaches, nectarines, medlars, apricots, quinces, tomatoes, 1d. the lb.
    (No duty exceeding ½d. the lb. to be levied on apples and pears from 14th July to 31st December.)
    Currants, raspberries, gooseberries, blackberries, and strawberries, ½d. the lb.
    Lemons, ½d. the lb.
14. Fruits, dried, 2d. the lb.
15. Fruits, preserved in juice or syrup, 25 per cent. *ad valorem.*
16. Fruit-pulp, and partially preserved fruit, n.o.e., 1½d. the lb.
17. Fruits preserved by sulphurous acid, 1d. the lb.
18. Glucose, 1d. the lb.
19. Honey, 2d. the lb.
20. Jams, jellies, marmalade, and preserves, 2d. the lb. or package of that reputed weight, and so in proportion for packages of greater or less reputed weight.
21. Jellies concentrated in tablets or powder, 4d. the lb.
22. Maizena and cornflour, ½d. the lb.
23. Meats, potted or preserved, 20 per cent. *ad valorem.*
24. Milk, preserved, 25 per cent. *ad valorem.*
25. Mustard, 2d. the lb.
26. Nuts of all kinds, except cocoanuts, 2d. the lb.
27. Oysters, preserved, 2d. the lb. or package of that reputed weight, and so in proportion for packages of greater or less reputed weight.
28. Pearl barley, 1s. the cwt.
29. Peas, split, 2s. the cwt.
30. Pickles, 3s. the imperial gallon.
31. Provisions n.o.e., 20 per cent., *ad valorem.*
32. Rice and rice-flour, 6s. the cwt.
33. Rice, undressed, and dressed in bond, 4s. the cwt.
34. Salt, except rock-salt, 10s. the ton.
35. Sardines, including the oil, 2d. the lb.
36. Sauces, 4s. the imperial gallon.
37. Spices, including pepper and pimento, unground, 2d. the lb.
38. Spices, including pepper and pimento, ground, 4d. the lb.
39. Sugar, ½d. the lb.
40. Treacle and molasses, ½d. the lb.

41. Vegetables, fresh, dried, or preserved, 20 per cent. *ad valorem.*
42. Vinegar, table, not exceeding 6·5 per cent. of acidity,* 6d. the gallon.

CLASS II.—TOBACCO.

43. Cigarettes, not exceeding in weight 2¼lb. per 1,000, 17s. 6d. the 1,000. And for all weight in excess of 2¼lb. per 1,000, 6d. the oz.
44. Cigars, 7s. the lb.
45. Snuff, 7s. the lb.
46. Tobacco, 3s. 6d. the lb.
47. Tobacco unmanufactured, entered to be manufactured in the colony in any licensed tobacco manufactory, for manufacturing purposes only, into tobacco, cigars, cigarettes, or snuff, 2s. the lb.

CLASS III.—ALCOHOLIC BEVERAGES, AND MATERIALS FOR MAKING SAME.

48. Ale, beer of all sorts, porter, cider, and perry, the gallon, or for six reputed quart bottles, or 12 reputed pint bottles, 2s. the gallon.
49. Cordials, bitters, and liqueurs, 16s. the liquid gallon.
50. Hops, 6d. the lb.
51. Malt, 2s. the bushel.
52. Rice malt, 1d. the lb.
53. Solid wort, 6d. the lb.
54. Spirits and strong waters, the strength of which can be ascertained by Sykes's hydrometer, 16s. the proof gallon.
    (No allowance beyond 16·5 under proof shall be made for spirits or strong waters of a less hydrometer strength than 16·5 under proof.)
55. Spirits and strong waters, sweetened or mixed, when not exceeding the strength of proof, 16s. the liquid gallon.
56. Spirits and strong waters in cases shall be charged as follows, namely:—
    Two gallons and under, as two gallons; over two gallons and not exceeding three, as three gallons; over three gallons and not exceeding four, as four gallons; and so on for any greater quantity contained in any case.
57. Spirits or strong waters, mixed with ingredients in any proportion exceeding 33 per cent. of proof spirit, and although thereby coming under any other designation, excepting patent or proprietary medicines, or tinctures and medicinal spirits otherwise enumerated, 16s. the liquid gallon.
58. Wine, Australian, containing not more than 35 per cent. of proof spirit verified by Sykes's hydrometer, the gallon, or for six reputed quart bottles, or twelve reputed pint bottles, 5s. the gallon.
59. Wine, other than sparkling and Australian, containing less than 40 per cent. of proof spirit verified by Sykes's hydrometer, the gallon, or for six reputed quart bottles, or twelve reputed pint bottles, 6s. the gallon.
60. Wine, sparkling, 9s. the gallon.

CLASS IV.—NON-ALCOHOLIC BEVERAGES, AND MATERIALS FOR MAKING SAME.

61. Aërated and mineral waters and effervescing beverages, 20 per cent. *ad valorem.*
62. Chicory, 3d. the lb.
63. Chocolate, 3d. the lb.
64. Cocoa, 3d. the lb.
65. Coffee, essence of, 20 per cent. *ad valorem.*
66. Coffee, raw, 2d. the lb.
67. Coffee, roasted, 5d. the lb.
68. Syrups; lime- or lemon-juice sweetened; raspberry vinegar, 25 per cent. *ad valorem.*
69. Tea, 4d. the lb.

* Vinegar exceeding 6·5 per cent. of acidity to be treated as acetic acid.

Class V.—Drugs, Medicines, Chemicals, and Druggists' Sundries.

70. Acid, acetic, n.o.e., containing not more than 30 per cent of acidity, 1½d. the lb.
    For every 10 per cent. of acidity or fraction thereof additional, ½d. the lb.
71. Acid, tartaric, 1d. the lb.
72. Baking-powder, yeast preparations, and other ferments, 20 per cent. *ad valorem.*
73. Chemicals n.o.e., including photographic chemicals, and glacial acetic acid, 20 per cent. *ad valorem.*
74. Cream of tartar, 1d. the lb.
75. Drugs and druggists' sundries and apothecaries' wares, n.o.e., 20 per cent. *ad valorem.*
76. Essences, flavouring, spirituous, 15 per cent. *ad valorem* until 1st February, 1896, and thereafter 16s. the liquid gallon.
77. Essences, flavouring, n.o.e., 15 per cent.
78. Eucalyptus oil, in bulk or bottle, 20 per cent. *ad valorem.*
79. Glycerine, refined, 20 per cent. *ad valorem.*
80. Opium, 40s. the lb.
81. Patent medicines, 40 per cent. *ad valorem.*
82. Proprietary medicines, or medicaments, (1) bearing the name of the proprietor on label or package; (2) bearing a prefixed name in the possessive case; (3) n.o.e., prepared by any occult secret or art, 40 per cent. *ad valorem.*
83. Saccharine, except in the form of tabloids or tablets, 1s. 6d. the ounce.
84. Sarsaparilla, 25 per cent. *ad valorem.*
85. Soda, carbonate and bicarbonate, 1s. the cwt.
86. Soda, crystals, 2s. the cwt.
87. Tinctures and medicinal spirits of any recognised pharmacopœia, containing more than 50 per cent. of proof spirit, 1s. the lb.
88. Tinctures and medicinal spirits of any recognised pharmacopœia, containing less than 50 per cent. of proof spirit, 6d. the lb.

Class VI.—Clothing and Textile Goods.

89. Apparel and ready-made clothing, and all articles n.o.e. made up wholly or in part from textile or other piece-goods, 25 per cent. *ad valorem.*
90. Apparel made by British or foreign tailors, dress-, mantle-, or jacket-makers, to the order of residents in the colony, and intended for the individual use of such residents, whether imported by the residents themselves or through an importing firm, 40 per cent, *ad valorem.*
91. Blankets, 20 per cent. *ad valorem.*
92. Collars and cuffs, of paper or other material, 25 per cent. *ad valorem.*
93. Cotton counterpanes, 20 per cent. *ad valorem.*
94. Cotton piece-goods, to include turkey twills, dress prints (hard-spun and plain-woven), where the invoice value does not exceed 4d. the yard; and cotton piece-goods n.o.e., 10 per cent. *ad valorem.*
95. Cotton piece-goods—namely, tapestry; cretonnes; chintz art crêpe, and serges; velveteens, velvets, and plushes, all kinds; damasks, moquette; sateens, linenettes; crepons; crimps; zephyrs; ginghams; turkey twills; prints; printed cottons; piqués; vestings; quiltings and marcellas; muslins of all kinds; nets; window-nets; hollands, curtains, and blinds; diapers; ticks, including coloured Belgian; towellings; laces, 20 per cent. *ad valorem.*
96. Drapery n.o.e., 20 per cent. *ad valorem.*
97. Feathers, ornamental (including ostrich), and artificial flowers, 25 per cent. *ad valorem.*
98. Forfar, dowlas, and flax sheeting, n.o.e., 20 per cent. *ad valorem.*
99. Furs, 25 per cent. *ad valorem.*

100. Haberdashery n.o.e., 20 per cent. *ad valorem.*
101. Hats of all kinds, including straw hats, also caps, 25 per cent. *ad valorem.*
102. Hosiery n.o.e., 20 per cent. *ad valorem.*
103. Lace, and laces, n.o.e., 25 per cent. *ad valorem.*
104. Millinery of all kinds, including trimmed hats, caps, and bonnets, 25 per cent. *ad valorem.*
105. Ribbons and crape, all kinds, 25 per cent. *ad valorem.*
106. Rugs, woollen, cotton, opossum, or other, 20 per cent. *ad valorem.*
107. Shawls, 20 per cent. *ad valorem.*
108. Silks, satins, velvets, plushes, n.o.e., composed of silk mixed with any other material, in the piece, 25 per cent. *ad valorem.*
109. Textile piece-goods other than cotton or silk, 20 per cent. *ad valorem.*
110. Umbrellas, parasols, and sunshades, 20 per cent. *ad valorem.*
111. Yarns n.o.e., 20 per cent. *ad valorem.*

Class VII.—Leather and Manufactures of Leather.

112. Boots, shoes, and slippers, n.o.e.; goloshes, clogs, and pattens, vamps, uppers, and laces, 22½ per cent. *ad valorem.*
113. Heel-plates, and toe-stiffeners and plates, 22½ per cent. *ad valorem.*
114. Leather—
    Leather belting and belt-leather, harness, bridle, legging, bag, kip (other than East India), 4d. the lb.
    Buff and split, including satin hides and tweeds, 3d. the lb.
    Cordovan, levanted leather, roans, sheepskins, morocco n.o.e., basils, 3d. the lb.
    Sole-leather, 2d. the lb.
    East India kip, Persians, lambskins and goatskins (dressed other than morocco), kangaroo and wallabi skins (dressed), tan and coloured calf, 2d. the lb.
    Leather n.o.e., 1d. the lb.
115. Leather board or compo, 4d. the lb.
116. Leather bags and leather-cloth bags, n.o.e., 20 per cent. *ad valorem.*
117. Leather, chamois, 20 per cent. *ad valorem.*
118. Leather cut into shapes, 22½ per cent. *ad valorem.*
119. Leather leggings, 22½ per cent. *ad valorem.*
120. Leather manufactures n.o.e., 20 per cent. *ad valorem.*
121. Portmanteaux; trunks; travelling-bags and brief-bags of leather or leather-cloth, 10in. in length and upwards, and carpet-bags, 25 per cent. *ad valorem.*
122. Saddlery and harness, whips and whip-thongs, 20 per cent. *ad valorem.*

Class VIII.—Furniture and Household Furnishing.

123. Basket- and wicker-ware n.o.e., not being furniture, 20 per cent. *ad valorem.*
124. Carpets and druggets; floorcloth; mats and matting, 20 per cent. *ad valorem.*
125. Desks, 20 per cent. *ad valorem.*
126. Furniture and cabinetware, n.o.e., and other than iron, 25 per cent. *ad valorem.*
127. Furniture-, knife-, and plate-powder and polish, 20 per cent. *ad valorem.*
128. Mantelpieces, other than stone, 20 per cent. *ad valorem.*
129. Upholstery n.o.e., 25 per cent. *ad valorem.*

Class IX.—China, Glass, and Earthen Goods.

130. Bricks, known as firebricks, 20 per cent. *ad valorem.*
131. China, porcelain, and parianware, 20 per cent. *ad valorem.*
132. Drainage pipes and tiles, 20 per cent. *ad valorem.*
133. Earthen flooring and garden-tiles, 20 per cent. *ad valorem.*
134. Earthenware, stoneware, and brownware, 20 per cent. *ad valorem.*

135. Filters, 20 per cent. *ad valorem.*
136. Fireclay, ground, and fireclay goods, 20 per cent. *ad valorem.*
137. Glass, crown, sheet, and common window, 2s. the 100 superficial feet.
138. Glassware; also plate-glass, and glass polished, coloured, and other kinds, n.o.e.; globes and chimneys for lamps, 20 per cent. *ad valorem.*
139. Lamps, lanterns, and lampwick, 20 per cent. *ad valorem.*
140. Plate-glass, bevelled or silvered; mirrors and looking-glasses, framed or unframed, 25 per cent. *ad valorem.*

Class X.—Fancy Goods, Musical Instruments, etc.

141. Artificial flies, 25 per cent. *ad valorem.*
142. Cards, playing, 6d. per pack.
143. Clocks, 20 per cent. *ad valorem.*
144. Dressing-cases, 20 per cent. *ad valorem.*
145. Fancy goods, and toys, 20 per cent. *ad valorem.*
146. Fishing tackle, including artificially-baited hooks other than flies, 20 per cent. *ad valorem.*
147. Jewellery; plate, gold or silver; greenstone, cut or polished, 20 per cent. *ad valorem.*
148. Mouldings in the piece, for picture-frames, cornices, or ceilings, 15 per cent. *ad valorem.*
149. Musical instruments of all kinds n.o.e., 20 per cent. *ad valorem.*
150. Oil, perfumed, 25 per cent. *ad valorem.*
151. Papier-maché ware, 20 per cent. *ad valorem.*
152. Perfumery, n.o.e., 25 per cent. *ad valorem.*
153. Perfumed spirits and Cologne-water; £1 1s. the liquid gallon until the 1st February, 1896, and thereafter £1 10s. the liquid gallon.
154. Photographic goods n.o.e. 20 per cent. *ad valorem.*
155. Pictures, paintings, drawings, engravings, and photographs, framed or unframed; picture- or photograph-frames and -mounts, 20 per cent. *ad valorem.*
156. Platedware, 20 per cent. *ad valorem.*
157. Statues, statuettes, casts, and bronzes, 20 per cent. *ad valorem.*
158. Tobacco-pipes and cases, cigar- and cigarette-holders and cases, cigarette-papers and -cases, 25 per cent. *ad valorem.*
159. Toilet preparations n.o.e., 25 per cent. *ad valorem.*
160. Watches, 20 per cent. *ad valorem.*
161. Walking-sticks, 20 per cent. *ad valorem.*

Class XI.—Paper Manufactures and Stationery.

162. Calendars and show-cards, all kinds, 25 per cent. *ad valorem.*
163. Cardboard boxes complete, or cardboard cut and shaped for boxes (including match-boxes), 25 per cent. *ad valorem.*
164. Directories of New Zealand, or of any part thereof; also covers for directories, 25 per cent. *ad valorem.*
165. Handbills, programmes and circulars, playbills and printed posters, 20 per cent. *ad valorem.*
166. Ink, writing, 20 per cent. *ad valorem.*
167. Paper bags, coarse (including sugar-bags), 7s. 6d. the cwt.
168. Paper bags n.o.e., 25 per cent. *ad valorem.*
169. Paper-hangings, 15 per cent. *ad valorem.*
170. Paper, wrapping—viz., blue candle, glazed cap, glazed casings, small hand, lumber hand, and tissue, 5s. the cwt.
171. Paper wrapping, other kinds, including brown, cartridge, and sugar papers, 5s. the cwt.
172. Printed matter relating to patent or proprietary medicines; trade catalogues, price-lists, and fashion-plates of the goods of firms or persons in the colony, 25 per cent. *ad valorem.*
173. Stationery and writing-paper n.o.e., 20 per cent. *ad valorem.*

174. Stationery, manufactured—viz., account-books; manuscript books; bill-head, invoice, and statement forms; printed or ruled paper; counter-books; cheque- and draft-forms; tags: labels; blotting-pads; sketch-books; book-covers; copying letter-books; manifold writers; albums (other than for photographs); diaries; birthday-books; plain or faint-lined ruled books; printed window-tickets; printed, lithographed, or embossed stationery; and Christmas, New Year, birthday, and Easter cards and booklets, 25 per cent. *ad valorem.*
175. Stereotypes and matrices, 25 per cent. *ad valorem.*

Class XII.—Manufactures of Metal.

176. Bicycles, tricycles, and the like vehicles; also finished or partly finished or machined parts of same, n.o.e., including weldless steel tubing cut to short lengths, 20 per cent. *ad valorem.*
177. Boilers, land and marine, 20 per cent. *ad valorem.*
178. Brass cocks, valves, unions, lubricators, and whistles, 20 per cent. *ad valorem.*
179. Brass manufactures n.o.e., 20 per cent. *ad valorem.*
180. Cartridges (shot), 10- to 24-bore, 1s. 6d. the 100.
181. Cartridge-cases, 9d. the 100.
182. Cartridges n.o.e., 20 per cent, *ad valorem.*
183. Cash-registering machines, 10 per cent. *ad valorem.*
184. Coffin-furniture, 20 per cent. *ad valorem.*
185. Composition-piping, 3s. 6d. the cwt.
186. Copper manufactures n.o.e., 20 per cent. *ad valorem.*
187. Copying-presses, 20 per cent. *ad valorem.*
188. Crab-winches, cranes n.o.e., capstans, and windlasses, 20 per cent. *ad valorem.*
189. Cutlery, 20 per cent. *ad valorem.*
190. Firearms, all kinds, 20 per cent. *ad valorem.*
191. Galvanised-iron manufactures n.o.e., 25 per cent. *ad valorem.*
192. Gasometers, and other apparatus for producing gas; also gas-meters, 10 per cent. *ad valorem.*
193. Gaspipes, iron, 5 per cent. *ad valorem.*
194. Hardware, ironmongery, and holloware, 20 per cent. *ad valorem.*
195. Iron bridges, and iron material n.o.e., for the construction of bridges, wharves, jetties, or patent slips, 20 per cent. *ad valorem.*
196. Iron columns for buildings, and other structural ironwork, 20 per cent. *ad valorem.*
197. Iron doors for safes and vaults, 20 per cent. *ad valorem.*
198. Iron, galvanised corrugated sheets, screws, and nails, 2s. the cwt.
199. Iron galvanised tiles, ridging, guttering, and spouting, 20 per cent. *ad valorem.*
200. Iron gates and gate-posts, staples, standards, straining posts and apparatus, 20 per cent. *ad valorem.*
201. Iron nails, 2s. the cwt.
202. Iron pipes, and fittings for same, including main-cocks, 5 per cent. *ad valorem.*
203. Iron, plain galvanised sheet and hoop, 1s. 6d. the cwt.
204. Iron tanks, exceeding 200 gallons and not exceeding 400 gallons, 10s. each.
205. Iron tanks of and under 200 gallons, 5s. each.
206. Iron work and wire work, 20 per cent. *ad valorem.*
207. Japanned and lacquered metal ware, 25 per cent. *ad valorem.*
208. Lawn-mowers, 20 per cent. *ad valorem.*
209. Lead, in sheets, 1s. 6d. the cwt.
210. Lead piping, 3s. 6d. the cwt.
211. Machinery n.o.e., 20 per cent. *ad valorem.*
212. Machinery, electric, and appliances, 10 per cent. *ad valorem*

213. All machinery for agricultural purposes, including chaff-cutters, corn-crushers, corn-shellers, also articles used in manufacturing the same—namely, chaff-cutting knives, tilt-rakes, fittings for threshing-mills, forgings for ploughs; but excluding reapers and binders, 5 per cent. *ad valorem.*
214. Machinery for dairying purposes (excluding separators and coolers), 5 per cent. *ad valorem.*
215. Machinery for flour-mills, woollen-mills, paper-mills, rope- and twine-making, dredging, saw-milling, planing, and wood-working (including lathes), oil-refining, boring, and also machinery for refrigerating or preserving meat, leather-splitting machines, and band-knives for same, 5 per cent. *ad valorem.*
216. Machinery for stamping and blocking tin, 5 per cent. *ad valorem.*
217. Machinery of every description for mining purposes, including machine pumps, but excluding machinery for gold-saving purposes and processes, 5 per cent. *ad valorem.*
218. Manufactures, n.o.e., of metal, or of metal in combination with any other material, 20 per cent. *ad valorem.*
219. Nails n.o.e., 3s. the cwt.
220. Portable engines on four or any greater number of wheels, with boilers of locomotive type; also traction-engines, 5 per cent. *ad valorem.*
221. Printing machines and presses, 5 per cent. *ad valorem.*
222. Pumps and other apparatus for raising water n.o.e., 20 per cent. *ad valorem.*
223. Railway and tramway plant and materials n.o.e., 20 per cent. *ad valorem.*
224. Sad-irons, 20 per cent. *ad valorem.*
225. Shot, 10s. the cwt.
226. Soda-water machines; also machines for aërating liquids, 5 per cent. *ad valorem.*
227. Steam-engines and parts of steam-engines n.o.e., 20 per cent. *ad valorem.*
228. Steam-engines and parts thereof (including the boiler or boilers therefor), imported specially for mining and dairying purposes, 5 per cent. *ad valorem.*
229. Tinware, and tinsmiths' furniture n.o.e., 25 per cent. *ad valorem.*
230. Waterworks pipes, iron, 5 per cent. *ad valorem.*
231. Weighbridges and weighing-machines, 20 per cent. *ad valorem.*
232. Wire mattresses and webbing, 20 per cent. *ad valorem.*
233. Zinc tiles, ridging, guttering, piping, 20 per cent. *ad valorem.*
234. Zinc manufactures n.o.e., 25 per cent. *ad valorem.*

Class XIII.—Timber and Articles made from Timber.

235. Bellows, other than forge, 20 per cent. *ad valorem.*
236. Blocks, wooden tackle, 20 per cent. *ad valorem.*
237. Buckets and tubs, of wood, 20 per cent. *ad valorem.*
238. Carriages, carts, drays, wagons, and perambulators, and wheels for the same, 20 per cent. *ad valorem.*
239. Carriage shafts, spokes, and felloes, dressed; bent carriage timber n.o.e. 20 per cent. *ad valorem.*
240. Doors, glazed with ornamental glass, 4s. each.
241. Doors, plain, 2s. each.
242. Sashes, glazed, with ornamental glass, 4s. the pair.
243. Sashes, plain, 2s. the pair.
244. Timber, palings, 2s. the 100.
245. Timber, posts, 8s. the 100.
246. Timber, rails, 4s. the 100.
247. Timber, sawn, dressed, 4s. the 100ft. superficial.
248. Timber, sawn, rough, 2s. the 100ft. superficial.
249. Timber, shingles and laths, 2s. the 1,000.
250. Woodenware and turnery n.o.e., and veneers, 20 per cent. *ad valorem.*

Class XIV.—Oils, Paints, etc.

251. Axle-grease and other solid lubricants, 20 per cent. *ad valorem.*
252. Harness oil and composition, and leather dressing, 20 per cent. *ad valorem.*
253. Naphtha, 6d. the gallon.
254. Oil, kerosene, 6d. the gallon.
255. Oil, linseed, 6d. the gallon.
256. Oil, mineral, including shale-waste or unrefined mineral-oil n.o.e., 6d. the gallon.
257. Oil n.o.e., 6d. the gallon.
258. Oil, olive, 6d. the gallon.
259. Oil, vegetable, in bulk, n.o.e., 6d. the gallon.
260. Oil, vegetable or other, in bottle, 15 per cent. *ad valorem.*
261. Paints and colours ground in oil or turpentine, 2s. 6d. the cwt.
262. Paints and colours mixed ready for use, 5s. the cwt.
263. Putty, 2s. the cwt.
264. Stearine, 1½d. the lb.
265. Varnish, enamel paints, gold size, 2s. the gallon.
266. Whiting and chalk, 1s. the cwt.

Class XV.—Agricultural and Farm Products, etc.

267. Animals, food for, of all kinds, n.o.e., 20 per cent. *ad valorem.*
268. Cattle (horned), 10s. each.
269. Chaff, £1 the ton.
270. Grain—namely, barley, 2s. the 100lb.
271. Grain and pulse of every kind n.o.e., 9d. the 100lb.
272. Grain and pulse of every kind, when ground or in any way manufactured, n.o.e., 1s. the 100lb.
273. Horses, £1 each.
274. Linseed, £1 the ton.
275. Maize, 9d. the 100lb.
276. Onions, £1 the ton.
277. Prepared calf-meal, £1 5s. the ton.

Class XVI.—Miscellaneous.

278. Bags, flour, 20 per cent. *ad valorem.*
279. Bags, calico, forfar, hessian, and linen, 20 per cent. *ad valorem.*
280. Bagging and bags n.o.e., 15 per cent. *ad valorem.*
281. Blacking and boot-gloss, 20 per cent. *ad valorem.*
282. Blacklead, 20 per cent. *ad valorem.*
283. Blue, 2d. the lb.
284. Brooms, brushes, and brushware n.o.e., 25 per cent. *ad valorem.*
285. Brushes, hair, and combs; toilet, clothes, and hat brushes, 20 per cent. *ad valorem.*
286. Candles, 2d. the lb. or package of that reputed weight, and so in proportion for packages of greater or less reputed weight.
287. Cement, 2s. the barrel.
288. Cordage and rope n.o.e., 20 per cent. *ad valorem.*
289. Cork, cut, including bungs, 20 per cent. *ad valorem.*
290. Fireworks n.o.e., 20 per cent. *ad valorem.*
291. Flock, 10 per cent. *ad valorem.*
292. Glue and size, 1½d. the lb.
293. Granite, sawn on not more than two sides, and not dressed or polished, 5 per cent. *ad valorem.*
294. Marble, granite, and other stone, dressed or polished, and articles made therefrom, including mantelpieces, 25 per cent. *ad valorem.*

295. Matches—
Wooden, in boxes containing not more than 60 matches, 1s. the gross of boxes.
In boxes containing over 60 and not more than 100 matches, 2s. the gross of boxes.
In boxes containing more than 100 matches, for every 100 matches or fraction thereof contained in one box, 2s. the gross of boxes.
Wax, "plaid vestas" in cardboard boxes containing under 100 matches, 1s. 2d. the gross of boxes.
"Pocket vestas" in tin or other boxes containing under 100 matches, 1s. 9d. the gross of boxes.
"Sportsman's," "Ovals," and "No. 4 tin vestas" in boxes containing not more than 200 matches, 5s. the gross of boxes.
Other kinds, for every 100 matches or fraction thereof contained in one box, 2s. 6d. the gross of boxes.
296. Nets and netting, 20 per cent. *ad valorem.*
297. Powder, sporting, 6d. the lb.
298. Rice, manufactured into starch in bond, 2s. the cwt.
299. Sacks, other than cornsacks, and jute sacks, 15 per cent. *ad valorem.*
300. Sausage-skins and casings (including brine or salt), 3d. the lb.
301. Soap, common yellow, and blue mottled, 5s. the cwt.
302. Soap n.o.e. 25 per cent. *ad valorem.*
303. Soap-powder, extract of soap, dry soap, and soft-soap, 20 per cent. *ad valorem.*
304. Spirits, methylated, 1s. the liquid gallon.
305. Spirits, cleared from warehouse, methylated under prescribed conditions, 6d. the liquid gallon.
306. Starch, 2d. the lb.
307. Tarpaulins, tents, rick- and wagon-covers, 20 per cent. *ad valorem.*
308. Twine, n.o.e., 20 per cent. *ad valorem.*
309. Washing-powder, 20 per cent. *ad valorem.*
310. Wax, paraffin, mineral, vegetable, and Japanese, 1½d. the lb.

In addition to any duty chargeable by law on any goods imported into the colony, a further duty of 20 per cent. *ad valorem* shall be charged when the goods are prison-made.

Table of Exemptions from Duties of Customs.

Class I.—Foods, etc.

Names of Articles.

311. Almonds, Barbary, Sicily, and French, used in confectioners' manufactures.
312. Anchovies, salted, in casks.
313. Arrowroot, sago, tapioca, macaroni, vermicelli, and prepared groats.
314. Rock salt.

Class IV.—Non-alcoholic Beverages, etc.

315. Cocoa-beans.

Class V.—Drugs, etc.

316. Acids—viz.: boracic; carbolic, in bulk; fluoric; muriatic; nitric; oxalic; oleic; pyrogallic; salicylic; sulphuric.
317. Concentrated extracts, or essences in liquid form or preserved in fat for perfume-manufacturing purposes in manufacturing warehouses, in bottles of not less than 1lb. in weight.
318. Disinfectants.

319. Drugs and chemicals—viz.: alum; sulphate of aluminium; sulphate of ammonia; anhydrous ammonia; aniline dyes; arsenic; bluestone, or sulphate of copper; borax; catechu; chloride of calcium; nitrate of silver; cochineal; creosote, crude or commercial; glycerine, crude; gum, arabic and tragacanth; gum benzoin; artificial gum arabic; gum damar; phosphorus; potash, caustic potash, and chlorate of potash; pearlash; cyanide of potassium; sal-ammoniac; saltpetre; acetate of soda, crude; soda-ash; caustic soda; nitrate of soda; silicate of soda; sulphate of soda; sulphide of sodium; strychnine; sulphur; chloride of zinc; iron-sulphates; gall-nuts; turmeric; saffron; nitrous-oxide gas; tree washes; insecticides; maltine; chlorodyne.
320. Essential oils, except eucalyptus; cod-liver oil; oil of rhodium.
321. Horse-drenches.
322. Medicinal barks, leaves, herbs, flowers, roots, and gums.
323. Scrub-exterminator.
324. Sheep-dip; sheep-drenches; sheep-licks.
325. Surgical and dental instruments and appliances.
326. Scientific and assay balances, retorts, flasks, and other appliances for chemical analysis and assay work.
327. Water-hardening chemicals for brewers' use.

CLASS VI.—CLOTHING AND TEXTILES.

328. Accoutrements for military purposes, excepting uniform clothing.
329. Brace-elastic and brace-mountings.
330. Bunting, in the piece.
331. Butter- and cheese-cloth.
332. Buttons, tapes, wadding, pins, needles.
333. Calico, white and grey, also cotton sheetings, in the piece.
334. Corduroy, moleskin, and plain beaverskin, of cotton, in the piece.
335. Coloured cotton shirtings; flannelette shirtings.*
336. Forfar, dowlas, and flax sheeting, when cut up under supervision in sizes not exceeding 47in. x 36in. for making flour-bags, and not exceeding 54in. for lining wool mats.
337. Fur-skins, green or sun-dried.
338. Gold or silver lace or braid for military clothing.
339. Hatmakers' materials—viz.: silk plush; felt hoods; shellac; galloons; calicoes; spale-boards for hat-boxes; leathers and linings; blocks; moulds; frames; ventilators; and tassels.
340. Hessians, plain or striped, and scrim.
341. Leather-cloth.
342. Minor articles (required in the making-up of apparel, boots, shoes, hats, caps, saddlery, umbrellas, parasols, and sunshades), enumerated in any order of the Commissioner, and published in the *Gazette*.
343. Sailcloth, canvas, and unbleached double-warped duck, in the piece.
344. Sewing cottons, silks, and threads; crotchet, darning, and knitting cottons; angola mendings not exceeding 45 yards, on cards.
345. Silk for flour-dressing.
346. Silk twist (shoemakers' and saddlers').
347. Staymakers' binding, eyelets, corset-fasteners, jean, ticks, lasting, sateen, and cotell.
348. Tailors' trimmings—viz.; plain-coloured imitation hair-cloth; canvas; plain Verona and plain diagonal, and such patterns of checked Italian cloth as may be approved of by the Commissioner of Customs; Italian cloth of cotton or wool; buckram; wadding and padding; silk, worsted, and cotton bindings and braids; stay-bindings; Russia braids; shoulder-pads; buckles; silesias; drab, slate, and brown jeans; pocketings; slate, black, and dyed unions and linens.

* See note overleaf.

349. Umbrella-makers' materials—viz.: reversible and levantine silk mixtures, gloria, and satin de chêne of not less than 44in. in width; alpaca cloth, with border; zanella cloth, with border; also other piece-goods on such conditions as the Commissioner may approve; sticks, runners, notches, caps, ferrules, cups, ribs, stretchers, tips, and rings.
350. Union shirtings the invoice value of which does not exceed 6d. the yard.*
351. Waterproof material in the piece.

Class VII.—Leather, and Articles used in Leather Manufactures.

352. Boot-elastic.
353. Bootmakers' linings, canvas, plain or coloured, bag and portmanteau linings, of such materials, qualities, and patterns as may be approved by the Commissioner.
354. Boots, shoes, and slippers—viz., children's, No. 0 to 3.
355. Cork soles, and sock soles.
356. East India kip, crust or rough-tanned, but undressed.
357. Goatskins, crust or rough-tanned, but undressed.
358. Grindery, except heel- and toe-plates.
359. Hogskins.
360. Kangaroo-, wallabi-skins, undressed,
361. Leather, japanned or enamelled; goatskins, dressed as morocco, coloured (other than black).
362. Saddle-trees.
363. Saddlers' ironmongery (except bits and stirrup-irons), hames, and mounts for harness; straining, surcingle, brace, girth, and roller webs; collar-check, and the same article plain, of such quality as may be approved by the Commissioner; legging-buckles.
364. Tanning materials, crude.

Class VIII.—Furniture, etc.

365. Blind-webbing and tape.
366. Upholsterers' webbing, hair-seating, imitation hair-seating, curled hair, gimp and cord of wool, cotton, or silk; tufts and studs.

Class IX.—China, Glass, etc.

367. Bottles, empty, plain glass, not being cut or ground; also, jars up to 3in. in diameter at the mouth.
368. Glass plates (engraved) for photo-lithographic work.
369. Jars or other dutiable vessels, containing free goods or goods subject to a fixed rate of duty, and being ordinary trade packages for the goods contained in them.

Class X.—Fancy Goods, etc.

370. Action-work and keys, in frames or otherwise, for manufacture of organs, harmoniums, and pianos; organ-pipes and stop-knobs.
371. Artists' canvas, colours, brushes, and pallet-knives.
372. Magic-lanterns, lenses, and slides.
373. Microscopes and astronomical telescopes, and lenses for same.
374. Musical instruments, specially imported for Volunteer bands.
375. Paintings, statuary, and works of art, presented to or imported by any public institution or art association registered as a body corporate, for display in the buildings of such institution or association, and not to be sold or otherwise disposed of.

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* Whenever any dispute arises as to the application of the exemption in favour of coloured cotton, flannelette, or union shirtings, in the case of fabrics alleged to be such shirtings, the Commissioner has power to decide such dispute: and in case of doubt on his part, he may require the fabric in dispute to be cut up for shirt-making, under such conditions as he prescribes.

376. Photographic cameras and lenses.
377. Photographs of personal friends in letters or packets.
378. Precious stenes, cut or uncut and unmounted.
379. Sensitized surfaces for photographic purposes.

CLASS XI.—PAPER, ETC.

380. Bookbinders' materials—viz., cloth, leather, thread, headbands, webbing, end-papers, tacketing-gut, marbling-colours, marble-paper, blue-paste for ruling-ink, staple-presses, wire-staples, staple-sticks.
381. Butter-paper, known as parchment paper or waxed paper.
382. Cardboard and pasteboard, of sizes not less than that known as "royal."
383. Cardboard boxes, material for—viz., gold and silver paper, plain and embossed, gelatine and coloured papers, known as "box-papers."
384. Cartridge-paper, for drawing-books.
385. Cloth-lined boards, not less than "royal."
386. Cloth-lined papers; enamelled paper; ivorite and gelatine; metallic paper, not less than "demy."
387. Copy-books and drawing-books.
388. Copying-paper, medium and double-foolscap, in original mill wrappers and labels.
389. Hand-made cheque-paper.
390. Ink, printing.
391. Masticated para.
392. Millboard and bookbinders' leather-board.
393. Paper, hand-made or machine-made book or writing, of sizes not less than the size known as "demy," when in original wrappers.
394. Printing-paper.
395. Printed books, papers, and music n.o.e.
396. School slates, and educational apparatus.

CLASS XII.—METALS.

397. Anchors.
398. Artificers' tools.
399. Axes and hatchets; spades, shovels, and forks; picks; mattocks; quartz and knapping-hammers; scythes, sheep-shears, reaping-hooks; soldering-irons, paperhangers' scissors; butchers' saws and cleavers.
400. Axles, axle-arms, and boxes.
401. Band-saws and folding-saws, including frames.
402. Bellows-nails.
403. Bicycles and tricycles, fittings for—viz., rubber-tires, pneumatic-tires, outside covers, and inner tubes; rubber and cork handles, and pedal-rubbers; also drop-forgings and stampings, ball-bearings, weldless steel tube in full lengths, rims, forks, and spokes, in the rough.
404. Blacksmiths' anvils, forges, and fans.
405. Bolts, 5in. by ½in. in diameter, and under, and nuts for same.
406. Brass and copper, in pigs, bars, tubes, or sheets.
407. Brass tubing and stamped work, in the rough, for gasaliers and brackets.
408. Caps, percussion.
409. Card-clothing for woollen-mills.
410. Chains, trace and plough chains; or metal articles required to repair or complete riding or driving harness or saddlery to be repaired or made in the colony.
411. Copper and composition rod, bolts, sheathing, and nails.
412. Couch-roll jackets, machine-wires, beater-bars, and strainer-plates for paper-mills.
413. Crucibles.
414. Emery-grinding machines and emery-wheels.
415. Empty iron drums, not exceeding 10 gallons capacity.
416. Engineers' machine tools.
417. Eyelets.

418. Fire-engines, including Merryweather's chemical fire-engines.
419. Fish-hooks.
420. Galvanising-baths, welded.
421. Gas-engines and hammers, and oil-engines.
422. Glassmakers' moulds.
423. Hydraulic cranes.
424. Iron- and brass-wove wire and wire-gauze; also wire netting.
425. Iron boiler-plates and unflanged end-plates for boilers; boiler-tubes not exceeding 6in. in diameter, and unflanged; Bowling's expansion rings; furnace-flues.
426. Iron, plain black sheet, rod, bolt, bar, plate, hoop, and pig.
427. Iron rolled girders.
428. Iron plates, screws, and castings for ships.
429. Iron wire n.o.e., including fencing-wire, plain and barbed.
430. Lead, in pigs and bars.
431. Locomotives.
432. Machine saws.
433. Machinery for gold-saving purposes and processes.
434. Metal fittings for trunks, portmanteaux, travelling-bags, leggings, bags, and satchels.
435. Metal sheaves for blocks.
436. Metallic capsules.
437. Perambulators and the like vehicles, fittings for, n.o.e.
438. Perforated or cellular sheet zinc or iron.
439. Printing type and materials n.o.e.
440. Rails for railways and tramways.
441. Reapers and binders, and reaping and mowing machines, and extra parts for same; materials for manufacturing agricultural machinery—namely, reaper-knife sections, fingers, brass and steel springs, malleable castings, discs for harrows, mould-boards and plough-shares, mould-board plates, and steel share-plates cut to pattern, skeith-plates; ploughs and harrows; combined threshers.
442. Riddles and sieves.
443. Rivets and washers.
444. Separators and coolers for dairying purposes.
445. Set-screws, engineers' studs, and split-pins.
446. Sewing-, knitting-, and kilting-machines.
447. Spiral springs (except sofa- and mattress-springs).
448. Steam and hydraulic pressure and vacuum gauges.
449. Surveyors' steel bands and measuring-tapes.
450. Swords.
451. Tacks of all kinds.
452. Tea-packing lead.
453. Tin, in pigs, bars, or sheets.
454. Tinsmiths' fittings, including stamped or blocked tin, planished or unplanished.
455. Tins, tops of, ornamented.
456. Wire, of brass, copper, or lead.
457. Zinc, plain sheet.
458. Zinc plates and copper plates for photo-lithographic work.

Class XIII.—Timber, etc.

459. Ash, hickory, and lancewood timber, unwrought.
460. Blacksmiths' bellows.
461. Brush woodware.
462. Carriage- and cart-shafts, spokes and felloes in the rough; hubs of all kinds; poles if unbent and unplaned, of all kinds; bent wheel-rims.
463. Carriage- and cart-makers' materials—viz., springs, mountings, trimmings, brass hinges, tire-bolts, shackle-holders, step treads, and other iron fittings (except steps, lamp-irons, dash-irons, seat-rails, and fifth wheels), rubber-cloth.

464. Churns.
465. Lignum-vitæ.
466. Sieves, hair.
467. Wooden handles for tools.

CLASS XIV.—OILS, ETC.

468. Benzine in bulk.
469. Oils—viz., candlenut, fish, whale, seal, and penguin, and palm.
470. Paints and colours n.o.e.
471. Shale oil, once run, suitable for gas-making
472. Spirits of tar.
473. Turpentine, driers, and terebene.

CLASS XV.—MISCELLANEOUS.

474. Apparatus and appliances solely for teaching purposes, as may be approved by the Commissioner.
475. Belting for machinery, other than leather.
476. Binder-twine.
477. Bricks, other than fire-bricks.
478. Building materials n.o.e.
479. Brushes for cream-separators and combined screens.
480. Candlenuts and candlenut kernels.
481. Candle-wick.
482. Canvas aprons and elevators for reapers and binders.
483. Carpenters' baskets.
484. Charts and maps.
485. Cotton waste.
486. Dye-stuffs and dyeing materials, crude.
487. Felt sheathing.
488. Food preservative n.o.e.
489. Gum boots.
490. Hawsers of 12in. and over.
491. Honey and brown Windsor soap composition.
492. Iron and steel cordage.
493. Jute bagging, bags, and sacks.
494. Manures.
495. Marble, and other stone, hewn or rough-sawn, not dressed or polished.
496. Netmakers' cotton twine.
497. Official supplies for consular officers of countries where a similar exemption exists in favour of British Consuls.
498. Papermakers' felts.
499. Passengers' baggage and effects, including only wearing-apparel and other personal effects that have been worn or are in use by persons arriving in the colony; also implements, instruments, and tools of trade, occupation, or employment of such persons; and household or other effects not exceeding £100 in value, which have been in use for twelve months prior to embarkation by the persons or families bringing them to the colony, and not intended for any other person or persons or for sale; also cabin-furnishings belonging to such persons.
500. Plaster of Paris.
501. Powder, blasting and meal.
502. Ship-chandlery n.o.e.
503. Ships' rockets, blue-lights, and danger-signals.
504. Spirits for manufacturing perfumed spirit, flavouring essences, and culinary essences in manufacturing warehouses. This exemption to cease on the 1st day of February, 1896.
505. Stones, mill, grind, oil, and whet.
506. Tobacco for sheepwash or for insecticide, after being rendered unfit for human consumption to the satisfaction of the Commissioner.

507. Treacle or molasses, mixed with bone-black in proportions to the satisfaction of the Commissioner.
508. Tubular woven cotton-cloth in the piece, for meat wraps.
509. Type-writers.
510. Wax, bottling.
511. Woolpacks and woolpockets.
512. Yarn—viz., coir, flax, hemp.
513. Articles and materials (as may from time to time be specified by the Commissioner) which are suited only for, and are to be used solely in, the fabrication of goods within the colony. All decisions of the Commissioner in reference to articles so admitted free to be published from time to time in the *Gazette*.
514. And all articles not otherwise enumerated.

Table of Excise Duties.

515. Tobacco, 1s. the lb.*
516. Cigars, cigarettes, and snuff, 1s. 6d. the lb.*
517. Beer, 3d. the gallon.
518. Articles in which spirit is a necessary ingredient, manufactured in a warehouse appointed under section 26 of "The Customs Laws Consolidation Act, 1882," namely—
    - Pharmacopœia tinctures, essences, extracts, and medicinal spirits containing more than 50 per cent of proof spirit, 9d. the lb.
    - Pharmacopœia tinctures, essences, extracts, and medicinal spirits containing less than 50 per cent. of proof spirit, 3d. the lb.
    - Culinary and flavouring essences, 12s. the liquid gallon, from 1st February, 1896.
    - Perfumed spirit, 20s. the liquid gallon, from 1st February, 1896.
    - Toilet preparations which are subject to 16s. the liquid gallon on importation, 12s. the liquid gallon.
    - Toilet preparations which are subject to 25 per cent. duty on importation, 6s. the liquid gallon.

Duties imposed by His Excellency the Governor under Section 17 of "The Customs and Excise Duties Act, 1888."

519. Olive stones, ground (see *New Zealand Gazette*, 15th May, 1890), 4d. the lb.
520. Brewers' caramel (see *New Zealand Gazette*, 21st August, 1890), 3d. the lb.
521. Liquid hops (see *New Zealand Gazette*, 21st December, 1893), 6s. the lb.
522. The United Asbestos Patent Salamander Decorations (see *New Zealand Gazette*, 14th May, 1896), 15 per cent. *ad valorem*.

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*"The Tobacco Excise Duties Act, 1896," section 2, enacts:—

"On and after the thirty-first day of December, one thousand eight hundred and ninety-six, section three of "The Customs and Excise Duties Act, 1891," shall be deemed to be repealed, and in lieu of the duties imposed by that section there shall be levied, collected, and paid, on and after that day, upon tobacco manufactured in the colony, at the time of making the entry for home consumption thereof, the several duties of excise following, that is to say,—

"On tobacco	... One shilling the pound.
"On cigars and snuff	... One shilling and sixpence the pound.
"On cigarettes—	
If manufactured by machinery ...	... Two shillings and sixpence the pound.
If made by hand...	... One shilling the pound."

NEW ZEALAND NEWSPAPERS.

THERE are (January, 1896) 198 publications on the register of newspapers for New Zealand. Of these, 53 are daily papers, 19 are published three times a week, 29 twice a week, 66 once a week, 4 fortnightly, and 27 monthly.

The names of the newspapers, with the postal districts and towns in which they are printed, are given in the following list, the second column showing the day or period of publication. M. signifies morning paper; E. evening paper:—

AUCKLAND.

Aratapu—	
Wairoa Bell (E.)	Friday.
Auckland—	
Auckland Evening Star (E.)	Daily.
Auckland Weekly News and Town and Country Journal (M.)	Saturday.
Bible Standard (M.)	Monthly.
Church Gazette (M.)	"
Helping Hand	"
Liberty (M.)	"
Mining Standard (M.)	Tuesday, Friday.
New Zealand A B C Guide	Monthly.
New Zealand Farmer, Bee and Poultry Journal (M.)	"
New Zealand Graphic, Ladies' Journal, and Youths' Companion	Wednesday.
New Zealand Herald (M.)	Daily.
Observer (M.)	Saturday.
Produce Circular and Monthly Report (M.)	Monthly.
Searchlight (M.)	Saturday.
Sharland's Trade Journal	"
Sporting Review	Thursday, Sat.
Cambridge—	
Waikato Advocate (M.)	Saturday.
Coromandel—	
Coromandel County News (E.)	Tuesday, Friday
Coromandel Sun (M.)	Saturday.
Dargaville—	
Northern Advertiser (E.)	Friday.
Hamilton—	
Waikato Times and Thames Valley Gazette (M.)	Tu., Th., Sat.
Kawakawa—	
Northern Luminary (M.)	Saturday.
Rotorua—	
Hot Lakes Chronicle (E.)	Wednesday.
Whangarei—	
Northern Advocate (E.)	Friday.

THAMES.

Opotiki—	
Korimako Hou	Monthly.
Opotiki Herald, Whakatane County and East Coast Gazette (E.)	Tuesday, Friday
Paeroa—	
Hauraki Tribune and Thames Valley Advertiser (M.	Tu., Th., Sat.
Ohinemuri Gazette (M.)	Saturday
Tauranga—	
Bay of Plenty Times and Thames Valley Warden (E.)	Mon., Wed., Fri.

Te Aroha—	
Te Aroha and Ohinemuri News and Upper Thames Advocate (M.)	Wed., Saturday.
Thames—	
Despatch (M.)	Saturday.
Thames Star (E.)	Daily.
Thames Advertiser and Miners' News (M.)	"
Waihi—	
Waihi Miner and Hauraki Goldfield Gazette (E.)	Tuesday, Friday.

GISBORNE.

Gisborne—	
Poverty Bay Herald (E.)	Daily.
Telephone (M.)	Saturday.

NEW PLYMOUTH.

Inglewood—	
Record and Waitara Age (M.)	Wed., Saturday.
Weekly Record (M.)	Saturday.
New Plymouth—	
Budget and Taranaki Weekly Herald (M.)	"
Daily News (M.)	Daily.
Taranaki Herald (E.)	"
Taranaki News (M.)	Saturday.
Opunake—	
Opunake Times (E.)	Tuesday, Friday.
Stratford—	
Egmont Post (E.)	Mon., Wed., Fri.
Egmont Settler (E.)	Daily.
Waitara—	
Waitara Times and Clifton County Gazette (M.)	Mon., Wed., Fri.

NAPIER.

Dannevirke—	
Bush Advocate (E.)	Tues., Thur., Sat.
Napier—	
Daily Telegraph (E.)	Daily.
Evening News and Hawke's Bay Advertiser (E.)	"
Hawke's Bay Herald (M.)	"
Hawke's Bay Weekly Courier (M.)	Friday.
New Zealand Fire and Ambulance Record	Monthly.
Waipawa—	
Waipawa Mail (E.)	Tues., Thur., Sat.
Wairoa—	
Wairoa Guardian and County Advocate (M.)	Wed., Saturday.

WANGANUI.

Eltham—	
Eltham Guardian; Kaponga, Ngaire, Te Roti, Hawera, Stratford, and Cardiff Advertiser (M.)	Mon., Wed., Fri.
Hawera—	
Egmont Star (M.)	Saturday.
Hawera and Normanby Star, Patea County Chronicle, and Waimate Plains Gazette (E.)	Daily.
Hawera Morning Post, Patea, Normanby, Eltham, Stratford, Kaponga, Manaia, and Opunake Register (M.)	"
Hunterville—	
Paraekaretu Express, Hunterville, Ohingaiti, Moawhango, and Rata Advertiser (M.)	Tuesday, Friday.
Manaia—	
Waimate Witness (E.)	Tuesday, Friday.

Marton—
Mercury (M.) .. .. Daily.
Rangitikei Advocate and Manawatu Argus (E.) .. .. "
Patea—
Patea County Press (E.) .. .. Mon., Wed., Fri.
Wanganui—
Wanganui Chronicle and Patea-Rangitikei Advertiser (M.) Daily.
Wanganui Herald (E.) .. .. "
Weekly Chronicle and Patea-Rangitikei Record .. .. Saturday.
Yeoman (M.) .. .. Friday.

WELLINGTON.

Carterton—
Wairarapa Observer, Featherston Chronicle, East Coast Advertiser, and South County Gazette (E.) .. .. Tues., Thur., Sat.
Eketahuna—
Eketahuna Express and North Wairarapa Courier (M.) .. Wed., Sat.
Feilding—
Feilding Star (E.) .. .. Daily.
Foxton—
Manawatu Herald (E.) .. .. Tues., Thur., Sat.
Greytown—
Wairarapa Standard (E.) .. .. Mon., Wed., Fri.
Masterton—
Eketahuna and Pahiatua Mail (M.) .. .. .. Daily.
Wairarapa Daily Times (E.) .. .. "
Wairarapa Star (E.) .. .. "
Wairarapa Weekly Times (E.) .. .. Wednesday.
Weekly Star and Wellington District Advertiser (M.) .. Thursday.
Otaki—
West Coast Mail and Horowhenua County Advertiser (M.) .. Tuesday, Friday.
Pahiatua—
Pahiatua Herald (E.) .. .. Mon., Wed., Fri.
Palmerston North—
Manawatu Daily Standard, Rangitikei Advertiser, and West Coast Gazette (M.) .. .. Daily.
Manawatu Daily Times (E.) .. .. "
Manawatu Weekly, and Oroua and Rangitikei Record (M.) .. Thursday.
Petone—
Hutt and Petone Chronicle (M.) .. .. Wednesday.
Shannon—
Manawatu Farmer and Horowhenua County Chronicle (E.) .. .. Mon., Wed., Fri.
Wellington—
Church Chronicle (M.) .. .. Weekly.
Daily Commercial News and Shipping Reporter (M.) .. Saturday.
Daybreak (M.) .. .. Fortnightly, Sat.
Evening Post (E.) .. .. Daily.
Fairplay (M.) .. .. Monthly.
New Zealand Craftsman (M.) .. .. Monthly.
New Zealand Mail, Town and Country Advertiser (M) .. Friday.
New Zealand Times (M.) .. .. Daily.
People (M.) .. .. Saturday.
Register and Property Investors' Guide .. .. .. Monthly.
Southern Sunbeam (M.) .. .. Saturday.
Typo .. .. Monthly.
Weekly Herald (M.) .. .. Saturday.
Wellington Price Current and New Zealand Trade Review (M) .. .. Monthly.
Woodville—
Woodville Examiner (E.) .. .. Mon., Wed., Fri.

	BLENHEIM.	
Blenheim—		
Evening Star (E.)		Saturday.
Marlborough Daily Times and Town and Country Advertiser (M.)		Daily.
Marlborough Express (E.)		"
Havelock—		
Pelorus Guardian and Miners' Advocate (M.)		Tuesday, Friday.
Kaikoura—		
Kaikoura Star and North Canterbury and South Marlborough News (E.)		" "
Picton—		
Marlborough Press, County of Sounds Gazette (M.)		" "
	NELSON.	
Collingwood—		
Golden Bay Argus (E.)		Thursday.
Nelson—		
Colonist (M.)		Daily.
Nelson Evening Mail (E.)		"
Nelson Evening Star (E.)		"
Takaka—		
Takaka News and Collingwood Advertiser (E.)		Thursday.
	WESTPORT.	
Charleston—		
Charleston Herald, Brighton Times, and Croninville Reporter (M.)		Wed., Saturday.
Lyell—		
Lyell Times and Central Buller Gazette (M.)		Saturday.
Westport—		
Buller Miner (M.)		Friday.
Westport News (M.)		Daily.
Westport Times and Evening Star (E.)		"
	GREYMOUTH.	
Brunnerton—		
Brunner News, Blackball Courier, and Grey Valley Advertiser (E.)		Daily.
Greymouth—		
Evening Star and Brunnerton Advocate (E.)		"
Grey River Argus (M.)		"
Weekly Argus (M.)		Weekly.
Reefton—		
Inangahua Herald and New Zealand Miner (M.)		Daily.
Inangahua Times and Reefton Guardian (E.)		"
	HOKITIKA.	
Hokitika—		
Hokitika Guardian and Evening Star (E.)		Daily.
Leader (M.)		Thursday.
West Coast Times (M.)		Daily.
Kumara—		
Kumara Times and Dillman's and Goldsborough Advertiser (E.)		"
Ross—		
Ross and Okarito Advocate and Westland Advertiser (M.)		Wed., Saturday.
	CHRISTCHURCH.	
Akaroa—		
Akaroa Mail and Banks Peninsula Advertiser (M.)		Tuesday, Friday.
Ashburton—		
Ashburton Guardian (E.)		Daily.
Ashburton Mail, Rakaia, Mount Somers, and Alford Forest Advertiser (M.)		Tues., Thur., Sat.

Christchurch—	
Canterbury Times (M.)	Friday.
Lyttelton Times (M.)	Daily.
Mercantile and Bankruptcy Gazette of New Zealand (E)	Friday.
New Zealand Baptist	Monthly.
New Zealand Butcher	"
New Zealand Church News (M.)	"
New Zealand Railway Review	"
New Zealand Schoolmaster (E.)	"
New Zealand Volunteer and Civil Service Gazette and Naval and Military Chronicle (M.)	"
New Zealand War Cry and Official Gazette of the Salvation Army (M.)	Saturday.*
New Zealand Wheelman	Fortnightly, Sat.
Press (M.)	Daily.
Prohibitionist	Fortnightly, Sat.
Southern Queen (M.)	Monthly.
Spectator (M.)	Friday.
Star (E.)	Daily.
Tribune	Monthly.
Truth (E.)	Daily.
Weekly Press (M.)	Friday.
Young Soldier	Saturday.
Oxford (East)—	
Oxford and Cust Observer (M.)	"
Rangiora—	
Rangiora Standard and North Canterbury Guardian (M.)	Wed., Saturday.
Southbridge—	
Ellesmere Guardian (M.)	" "

TIMARU.

Temuka—	
Geraldine Guardian (M.)	Tues., Thur., Sat
Temuka Leader (M.)	" " "
Timaru—	
South Canterbury Times (E.	Daily.
Timaru Herald (M.)	"
Waimate—	
Waimate Times (M.)	Wed., Saturday.

OAMARU.

Oamaru—	
North Otago Times (M.)	Daily.
Oamaru Mail (E.)	"

DUNEDIN.

Balclutha—	
Clutha Leader (M.)	Friday.
Free Press (M.)	"
Clinton—	
Clutha County Gazette, Popotunoa Chronicle, and Clinton Advertiser (M.)	"
Clyde—	
Dunstan Times, Vincent County Gazette, and General Goldfields Advertiser (M.)	"
Cromwell—	
Cromwell Argus and Northern Goldfields Gazette (M.)	Tuesday.

* The War Cry receives Press telegrams at evening rates on Monday.

Dunedin—	
Advocate (M.)	Saturday.
Christian Outlook (M.)	"
Evening Star (E.)	Daily.
Farmers' Circular (M.)	Thursday, fortnightly.
Katipo	Monthly.
New Zealand Insurance, Finance, and Mining Journal (M.)	"
New Zealand Tablet (M.)	Friday.
Otago Daily Times (M.)	Daily.
Otago Witness (M.)	Thursday.
Otago Workman, Dunedin and Suburban Advertiser (M)	Saturday.
Phonographic Magazine and Typewriting News	Monthly.
Temperance Standard	"
Triad (M.)	"
Weekly Budget (M.)	Saturday.
Lawrence—	
Tuapeka Times (M.)	Wed., Saturday.
Milton—	
Bruce Herald (M.)	Tuesday, Friday.
Mosgiel—	
Taieri Advocate (M.)	Wed., Saturday.
Naseby—	
Mount Ida Chronicle (Thurs. E. and Sat. M.)	Thur., Saturday.
Palmerston—	
Palmerston and Waikouaiti Times (M.)	Friday.
Roxburgh—	
Mount Benger Mail (M.)	Saturday.
Tapanui—	
Tapanui Courier and Central Districts Gazette (M.)	Wednesday.

INVERCARGILL.

Arrowtown—	
Lake County Press (E.)	Thursday.
Gore—	
Mataura Ensign (E.)	Tues., Th., Sat.
Southern Standard (M.)	Tuesday, Friday
Invercargill—	
Southern Cross (E.)	Saturday.
Southlander (M.)	Friday.
Southland Daily News (E.)	Daily.
Southland Times (M.)	"
Weekly Times (M.)	Friday.
Queenstown—	
Lake Wakatipu Mail (E.)	"
Riversdale—	
Waimea Plains Review and Market Report (M.)	"
Riverton—	
Western Star and Wallace County Gazette (M.)	Wed., Saturday.
Wyndham—	
Wyndham Herald (M.)	Wed., Friday.

The foregoing towns are arranged according to the postal district in which they are situated.

Taking the provincial districts, Auckland has 37 publications registered as newspapers, Taranaki 10, Hawke's Bay 8, Wellington 45, Marlborough 6, Nelson 10, Westland 11, Canterbury 31, and Otago 40.

PART II.—STATISTICAL INFORMATION.

[The progress of the colony from the beginning is shown in the statistical broadsheets which follow the General Index.]

POPULATION.

THE estimated population of New Zealand, excluding Maoris, on the 31st December, 1895, with the increase for the year by excess of births over deaths and by immigration over emigration, was as under:—

	Persons.	Males.	Females.
Estimated population (exclusive of Maoris) on 31st December, 1894	686,128	363,763	322,365
Increase during the year 1895—			
Excess of births over deaths	11,683	5,527	6,156
Excess of arrivals over departures ..	895	435	460
	12,578	5,962	6,616
Estimated population (exclusive of Maoris) on 31st December, 1895	698,706	369,725	328,981

But the above estimate has been shown by the census, taken on the 12th April, 1896, to be slightly too low, as a deduction from the census population of the natural increase and excess of arrivals over departures for the March quarter of this year, with allowance for twelve days of April, would give for the 31st December, 1895, a total of 700,331 persons.

The population of the colony (exclusive of Maoris), as returned in the census schedules for the night of the 12th April, 1896, was 703,360 persons, of whom 3,711 were Chinese, and 2,259 half-castes living amongst and as Europeans.

A census of the Maori population was taken during February of 1896, when the number of the Native race was found to be 39,854 persons, including 3,503 half-castes living as Maoris. 229 Maori women were returned as married to European husbands. The complete population (European and Maori) of the colony was therefore 743,214 persons, as exhibited in the following statement, specifying the numbers for each sex:—

	Persons.	Males.	Females.
Population (exclusive of persons of the aboriginal native race, of mixed European and Native blood, and Chinese)	697,390	366,607	330,783
Half-castes and persons of mixed race living as and among Europeans	2,259	1,123	1,136
Chinese	3,711	3,685	26
Aboriginal natives (including 229 Maori wives of Europeans)	36,351	19,729	16,622
Half-castes and persons of mixed race living among and as members of Maori tribes ..	3,503	1,944	1,559
Total population	*743,214	393,088	350,126

* Not including 171 persons, officers and crew of a British man-of-war.

The total half-caste or mixed European and Native population was 5,762 persons. The number of half-castes living among Europeans increased since 1891 by 75, or at the rate of 3·4 per cent. In that year the number of Maori wives of Europeans was 251; in 1896 it was 229. The Chinese decreased from 4,444 at the time of the census of 1891 to 3,711 in April, 1896; or at the rate of 16·5 per cent., caused mainly by the excess of departures over arrivals.

The Maori population fell from 41,993 in 1891 to 39,854 in 1896, according to the returns.

The increase on the total European population between April, 1891, and April, 1896, amounted to 76,702 persons, or a rate of 12·24 per cent. Between the census of 1886 and that of 1891 the numerical increase was 48,176 persons, or 8·33 per cent., so that an improved progress was made during the last five-year period to the extent of 3·91 per cent. The average annual increase in the period 1891–96 was at the rate of 2·33 per cent.

The population of the principal divisions of the colony in April, 1896, was—

	Persons.	Males.	Females.
North Island and adjacent islets (exclusive of Maoris)	340,631	181,089	159,542
Middle Island and adjacent islets (exclusive of Maoris)	362,236	190,038	172,198
Stewart Island	252	152	100
Chatham Islands (exclusive of Natives) ..	234	132	102
Kermadec Islands	7	4	3
Total for the colony (exclusive of Maoris)	703,360	371,415	331,945

During the interval between the censuses of April, 1891, and April, 1896, the increase of population in the North Island was far in excess of the increase in the South Island. The figures are: North Island, 1891, 281,455 persons, against 340,631 in 1896, a difference of 59,176, or at the rate of 21·03 per cent.; South Island, 1891, 344,711 persons, against 362,236 in 1896, a difference of only 17,525, or 5·08 per cent. The European population of Stewart Island increased from 202 to 252, and that of the Chatham Islands fell from 271 to 234 persons. The Kermadec Islands appeared for the first time in 1891 as part of New Zealand, with a population of 19 persons; the population is now only 7 persons. During the period 1886–91 the increase for the North Island was 30,973 persons, or a rate of 12·37 per cent; and of the South Island 17,119, or 5·23 per cent.; so that the North Island has advanced with more rapid strides in the quinquennium 1891–96 than in the previous one; while the rate of progress in the South Island has for both periods been but 5 per cent., or less than the natural increase by excess of births over deaths.

Population of Provincial Districts.

The following table gives the numbers of males and females in each provincial district in April, 1891, and April, 1896, and also for the Chatham Islands:—

Provincial Districts.	April, 1891.			April, 1896.		
	Persons.	Males.	Females.	Persons.	Males.	Females.
Auckland ..	133,159	69,891	63,268	153,564	81,206	72,358
Taranaki ..	22,065	11,757	10,308	31,175	16,900	14,275
Hawke's Bay ..	28,506	15,744	12,762	34,038	18,397	15,641
Wellington ..	97,725	52,375	45,350	121,854	64,586	57,268
Marlborough ..	12,767	7,069	5,698	12,483	6,704	5,779
Nelson	34,770	19,448	15,322	35,734	19,574	16,160
Westland ..	15,887	9,255	6,632	14,469	8,106	6,363
Canterbury ..	128,392	66,105	62,287	135,858	69,708	66,150
Otago	153,097	81,073	72,024	163,944	86,098	77,846
Chatham Islands	271	149	122	234	132	102
Kermadec Islands	19	11	8	7	4	3
Totals ..	626,658	332,877	293,781	703,360	371,415	331,945

The numerical and centesimal increases for the provincial districts during the periods 1886–91 and 1891–96 were:—

Provincial Districts.	1886-91.		1891-96.	
	Numerical.	Per-centage.	Numerical.	Per-centage.
Auckland	Increase, 2,780	2·13	Increase, 20,405	15·32
Taranaki	„ 4,066	22·59	„ 9,110	41·29
Hawke's Bay ..	„ 3,938	16·03	„ 5,532	19·41
Wellington	„ 20,189	26·04	„ 24,129	24·69
Marlborough ..	„ 1,654	14·88	Decrease, – 284	–2·22
Nelson	„ 4,567	15·12	Increase, 964	2·77
Westland	Decrease, – 44	–0·28	Decr., – 1,418	–8·93
Canterbury	Increase, 6,992	5·76	Increase, 7,466	5·82
Otago	„ 3,943	2·64	„ 10,847	7·09

Of the total increase in the period 1891–96, amounting to 76,702 persons for the colony, or 12·24 per cent., more than one-half took place in the Wellington and Auckland Provincial Districts; the numbers by way of increase for those districts being 24,129, or 24·69 per cent., and 20,405, or 15·32 per cent., respectively. But the largest proportional advance was in Taranaki, being the really excellent increase of 41·29 per cent. Hawke's Bay shows an increase of 19·41 per cent. The population of Otago increased 7·09 per cent. only; Canterbury still less, 5·82 per cent.; while in Marlborough there was an actual decrease for the quinquennium of 2·22 per cent., and in Westland the decrease of population was at the rate of 8·93. The advantage is strikingly in favour of the provincial districts of the North Island, as pointed out previously. The rate of progress in 1891–96 was greater than that in 1886–91 in Auckland, Taranaki, Hawke's Bay, and Otago, being nearly the same in Wellington and Canterbury. At Nelson the progress was decidedly less in the later period, and in Westland there is further decline noticed. Marlborough, which showed an increase for 1886–91, now shows a loss.

Population of Counties.

New Zealand is, by "The Counties Act, 1876," divided nto counties and boroughs, excepting certain outlying islands, which are not within county boundaries. It is provided by the above-mentioned Act that boroughs shali not be included in counties. In April, 1896, the number of the counties was 81. Of these, the North Island had 47, with a population amounting altogether to 191,374 persons. The South Island had 33 counties, the population being 200,117 persons. Stewart Island is a county in itself, and has a population of 244 persons. The names and populations of the various counties in the colony were as under at the date of the enumeration:—

Counties.	Census, 1896.	Census, 1891.	Increase or Decrease.
Mongonui ...	1,889	1,389	Inc. 500
Whangaroa ...	969	878	„ 91
Hokianga ...	1,909	1,494	„ 415
Bay of Islands	2,723	2,562	„ 161
Hobson	3,750	3,298	„ 452
Whangarei ...	6,847	6,120	„ 727
Otamatea ...	2,483	2,054	„ 429
Rodney ...	3,464	3,170	„ 294
Waitemata ...	6,762	6,184	„ 578
Eden	15,940	13,782	„ 2,158
Manukau ...	12,185	11,925	„ 260
Coromandel ...	4,987	2,846	„ 2,141
Thames ...	4,515	4,340	„ 175
Ohinemuri ...	4,761	1,516	„ 3,245
Piako	2,706	2,517	„ 189
Waikato ...	2,814	2,738	„ 76
Waipa	3,584	3,395	„ 189
Raglan	1,545	1,090	„ 455
Kawhia ...	598	308	„ 290
West Taupo ...	156	119	„ 37
East Taupo ..	232	152	„ 80
Rotorua ...	840	418	„ 422
Tauranga ...	1,622	1,393	„ 229
Whakatane ...	1,988	1,524	„ 464
Waiapu ...	447	379	„ 68
Cook	5,287	3,945	„ 1,342
Clifton	1,450	908	„ 542
Taranaki ...	9,970	7,905	„ 2,065
Stratford ...	5,141	2,521	„ 2,620
Hawera ...	6,934	4,347	„ 2,587
Patea	3,084	2,608	„ 476
Waitotara ...	2,737	2,255	„ 482
Wanganui ...	3,095	2,281	„ 814
Rangitikei ...	6,030	4,438	„ 1,592
Kiwitea ...	2,428		
Oroua	6,450	7,418	„ 2,811
Pohangina ...	1,351		
Manawatu ...	2,709	2,725	Dec. 16
Horowhenua ...	3,792	2,289	Inc. 1,503
Hawke's Bay ...	6,894	6,028	„ 866
Wairoa	1,490	1,246	„ 244
Waipawa ...	8,866	...*	...

Counties.	Census, 1896.	Census, 1891.	Increase or Decrease.
Patangata ...	2,374	2,044	Inc. 330
Pahiatua ...	3,208	...*	...
Wairarapa North ...	7,209	5,143	„ 2,066
Wairarapa South ...	5,409	4,980	„ 429
Hutt	5,750	...*	...
Sounds	747	720	„ 27
Marlborough ...	6,330	6,520	Dec. 190
Kaikoura ...	1,575	1,460	Inc. 115
Collingwood ...	2,509	2,103	„ 406
Waimea ...	8,591	...*	...
Buller	4,833	4,659	„ 174
Inangahua ...	4,254	4,648	Dec. 394
Grey	4,592	4,330	Inc. 262
Westland ...	4,723	5,031	Dec. 308
Amuri	916	967	„ 51
Cheviot ...	1,042	164	Inc. 878
Ashley	11,913	12,396	Dec. 483
Selwyn	30,090	...*	...
Akaroa	3,886	3,771	Inc. 115
Ashburton ...	10,820	9,501	„ 1,319
Geraldine ...	7,499	14,588	„ 634
Levels	7,723		
Mackenzie ...	1,514	1,180	„ 334
Waimate ...	4,777	4,043	„ 734
Waitaki... ...	8,876	8,375	„ 501
Waihemo ...	2,148	2,040	„ 108
Waikouaiti ...	4,389	4,334	„ 55
Peninsula ...	2,645	2,701	Dec. 56
Taieri	6,950	7,079	„ 129
Bruce	4,828	4,696	Inc. 132
Tuapeka ...	6,477	6,327	„ 150
Clutha	6,564	5,574	„ 990
Maniototo ...	3,742	2,927	„ 815
Vincent ...	4,090	3,718	„ 372
Lake	2,663	2,919	Dec. 256
Southland ...	21,603	...*	..
Wallace ...	6,657	5,306	Inc. 1,351
Fiord	151	71	„ 80
Stewart Island	244	202	„ 42

As before stated, the total county population amounted to 391,735, or 55·69 per cent. of the total for the colony.† In counties are included all towns not constituted municipal boroughs; but, on the other hand, the people living in many of the boroughs can hardly be called townsfolk. The population in boroughs, which is given in detail further on, was 307,294 persons, or 43·69 per cent. of the

* Sundry boroughs were cut out from these counties between 1891 and 1896.
† For population of ridings, road districts, and localities, see Census Volume, p. 32, Part I.

whole. For every 100 persons resident in counties in 1896 there were 78 residing in boroughs. In 1891 the counties had 352,097 persons, and the boroughs 270,343, or, in other words, for every 100 persons in counties, 76 were residents of the boroughs. Thus it will be seen that the proportion of the town to the county population was slightly greater in 1896 than in 1891.

Population of Boroughs.

There were 95 municipal boroughs in existence when the census of 1896 was taken. This was an increase of 8 on the number in 1891. Some of the new boroughs were town districts in 1891. In the following tables no populations are given for 1891 in respect of boroughs incorporated after that date, as a true comparison cannot well be made.

Boroughs.	Census, 1896.	Census, 1891.	Increase or Decrease.
Birkenhead ...	690	455	Inc. 235
Devonport ...	3,010	2,455	" 555
Auckland ...	31,424	28,613	" 2,811
Newton ...	2,379	2,087	" 292
Newmarket ...	1,929	1,586	" 343
Parnell ...	4,196	3,967	" 229
Onehunga ...	2,913	2,924	Dec. 11
Thames ...	4,261	4,618	" 357
Hamilton ...	1,248	1,212	Inc. 36
Cambridge ...	865	850	" 15
Tauranga ...	1,018	1,055	Dec. 37
Gisborne ...	2,334	2,158	Inc. 176
New Plymouth	3,825	3,350	" 475
Hawera ...	1,770	1,284	" 486
Patea ...	739	676	" 63
Wanganui ...	5,936	5,011	" 925
Marton ...	1,151	976	" 175
Feilding ...	2,045	1,583	" 462
Palmerston North ...	5,910	4,303	" 1,607
Foxton ...	1,102	1,223	Dec. 121
Hastings ...	3,190	2,303	Inc. 887
Napier ...	9,231	8,341	" 890
Dannevirke ...	1,415	...*	...
Woodville ...	1,060	971	" 89
Pahiatua ...	1,158	...*	...
Masterton ...	3,493	3,114	" 379
Carterton ...	1,291	1,112	" 179
Greytown ...	1,129	1,141	Dec. 12
Lower Hutt ...	1,520	1,329	Inc. 191
Petone ...	2,685	2,178	" 507
Onslow ...	1,249	979	" 270
Wellington ...	37,441	31,021	" 6,420
Karori ...	1,024	...*	...
Melrose ...	2,044	1,224	" 820
Picton ...	870	788	" 82
Blenheim ...	3,018	3,294	Dec. 276
Nelson ...	6,659	6,626	Inc. 33
Richmond ...	562	...*	...
Westport ...	2,424	2,622	Dec 198
Greymouth ...	3,099	3,787	" 688
Brunner ...	1,632	2,231	" 599
Kumara ...	1,149	1,176	" 27
Hokitika ...	2,059	2,178	" 119
Ross	727	822	" 95
Rangiora ...	1,869	1,783	Inc. 86
Kaiapoi ...	1,828	1,371	" 457
Christchurch...	16,964	16,223	" 741
Linwood ...	6,115	...*	...
St. Albans ...	5,781	5,247	" 534
Sydenham ...	10,312	9,680	" 632
Woolston ...	2,057	...*	...
Sumner ...	588	...*	...
Lyttelton ...	3,898	4,087	Dec. 189
Akaroa ...	613	571	Inc. 42
Ashburton ...	2,082	1,900	" 182
Timaru ...	3,613	3,668	Dec. 55
Waimate ...	1,286	1,379	" 93
Oamaru ...	5,225	5,621	" 396
Hampden ...	353	300	Inc. 53
Palmerston South ...	775	790	Dec. 15
Hawkesbury ...	760	743	Inc. 17
Port Chalmers	1,901	2,028	Dec. 127
North-east Valley ...	3,374	3,337	Inc. 37
Maori Hill ...	1,483	1,426	" 57
West Harbour	1,366	1,297	" 69
Dunedin ...	22,815	22,376	" 439
Roslyn ...	4,118	3,845	" 273
Mornington ...	3,584	3,523	" 61
Caversham ...	4,763	4,690	" 73
St. Kilda ...	1,185	1,153	" 32
South Dunedin	4,592	4,222	" 370
Green Island...	663	687	Dec. 24
Mosgiel ...	1,382	1,304	Inc. 78
Milton ...	1,139	1,158	Dec. 19
Kaitangata ...	1,362	1,145	Inc. 217
Lawrence ...	996	1,026	Dec. 30
Roxburgh ...	433	410	Inc. 23
Tapanui ...	408	428	Dec. 20
Balclutha ...	925	867	Inc. 58
Naseby ...	447	496	Dec. 49
Cromwell ...	539	474	Inc. 65
Alexandra ...	454	310	" 144
Arrowtown ...	409	426	Dec. 17
Queenstown ...	781	779	Inc. 2
Gore	2,032	1,618	" 414
Mataura ...	789	*	...
Wintou ...	397	288	" 109
Invercargill ...	5,632	4,950	" 682
North Invercargill ...	877	717	" 160
South Invercargill ...	1,886	1,559	" 327
East Invercargill	935	736	" 199
Avenal ...	327	302	" 25
Gladstone ...	339	287	" 52
Campbelltown	1,075	650	" 425
Riverton ...	893	843	" 50

* Boroughs constituted since 1891.

The Cities of Auckland, Christchurch, and Dunedin have considerable suburbs. The suburban population of Wellington is comparatively small. The following gives the names and populations of the several localities which may fairly be termed suburbs of the four principal boroughs:—

SUBURBS OF AUCKLAND.

Boroughs—	Population, 1896.
Birkenhead	690
Devonport	3,010
Newmarket	1,929
Newton	2,379
Parnell	4,196
Road Districts—	
Arch-hill	1,557
Eden Terrace	1,604
Epsom	660
Mount Albert	1,668
Mount Eden	3,677
Mount Roskill	495
One-tree Hill	975
Point Chevalier	591
Remuera	2,034
Northcote Riding	530
Outlying portion of Parnell Riding, being land in the Domain with hospital on it	197
Total suburbs	26,192
Auckland City	31,424
Total Auckland and suburbs	57,616

SUBURBS OF WELLINGTON.

Boroughs—	
Onslow	1,249
Melrose	2,044
Karori	1,024
Total suburbs	4,317
Wellington City	37,441
Total Wellington and suburbs	41,758

SUBURBS OF CHRISTCHURCH.

Boroughs—	Population, 1896.
St. Albans	5,781
Sydenham	10,312
Linwood	6,115
Woolston	2,057
Road Districts—	
Avon (part)	2,962
Heathcote (part)	1,980
Riccarton (part)	3,657
Spreydon	1,278
Halswell (part)	224
Total suburbs	34,366
Christchurch City	16,964
Total Christchurch and suburbs	51,330

In laying off the suburbs of Christchurch the boundaries of the Christchurch Health District have been mainly followed.

SUBURBS OF DUNEDIN.

Boroughs—	
Caversham	4,763
Maori Hill	1,483
Mornington	3,584
North-East Valley	3,374
Roslyn	4,118
St. Kilda	1,185
South Dunedin	4,592
West Harbour	1,366
Total suburbs	24,465
Dunedin City	22,815
Total Dunedin and suburbs	47,280

The increase of population for five years at the four chief centres, with their suburbs, was:—

	Census, 1891.	Census, 1896.	Numerical Increase	Increase per Cent.
Auckland and suburbs	51,287	57,616	6,329	12·3
Wellington and suburbs	34,190	41,758	7,568	22·1
Christchurch and suburbs	47,846	51,330	3,484	7·3
Dunedin and suburbs	45,869	47,280	1,411	3·1

Thus the two principal cities of the North Island are found to have progressed at a greater rate than those of the South Island, and Wellington in particular to have developed at seven times the

rate of Dunedin and three times as fast as Christchurch during the quinquennium.

Population of Town Districts.

Besides the boroughs, there are 39 town districts (not including the special town district of Rotorua, constituted under "The Thermal Springs Districts Act, 1881,") which are portions of the counties in which they are situated. Two only of these, Stratford and Hampstead, have more than 1,000 inhabitants. A list of these town districts is subjoined:—

Town Districts.	Population.	Town Districts.	Population.
Kamo	222	Clyde (Wairoa)	579
Whangarei	744	Taradale	807
Helensville	564	Ormondville	453
Papakura	274	Waipawa	764
Te Aroha	672	Kaikoura North	301
Te Awamutu	347	Featherston	711
Kihikihi	202	Johnsonville	493
Ngaruawahia	235	Havelock	365
Rotorua*	499	Amberley	437
Opotiki	641	Southbridge	494
Waitara (Raleigh)	517	Hampstead	1,214
Opunake	400	Tinwald	538
Inglewood	658	Geraldine	841
Stratford	1,256	Temuka	660
Normanby	396	Arowhenua	789
Manaia	471	Allanton (formerly Grey) ..	274
Waverley	442	Outram	452
Lethbridge	251	Clinton	474
Bulls	521	Wyndham	483
Halcombe	376	Otautau	367

Population of Adjacent Islands.

The names and populations of the islands are:—

Islands.	Total.	M.	F.	Islands.	Total.	M.	F.
Rangitoto	3	3	..	Motutapu	11	8	3
Great Barrier ..	307	193	114	Brown's	1	1	..
Week's Island ..	2	1	1	Rotoroa (Ruth's) ..	15	6	9
Waiheke	166	76	90	Slipper	3	3	..
Kawau	10	7	3	Portland	25	10	15
Motiti	9	8	1	Kapiti	1	1	..
Tiritiri	6	2	4	Somes's	9	3	6
Ponui Light ..	1	1	..	Stephens	16	7	9
Ponui Island ..	28	13	15	The Brothers ..	3	3	..
Cuvier	6	4	2	Quarantine	2	1	1
Moturoa	2	1	1	Dog	13	5	8
Mercury	7	2	5	Ruapuki	9	9	..
Mokohinau	5	3	2	Centre	15	10	5
Motuhora	8	4	4	Chatham	234	132	102
Bean Rock Light ..	1	1	..	Kermadec	7	4	3
Motuhihi	11	6	5		—	—	—
Pahiki	10	7	3		950	538	412
Rakino	4	3	1		—	—	—

The islands which are not included within the boundaries of the counties had a population of 950 persons (exclusive of Maoris),

* Constituted under "The Thermal Springs Districts Act, 1881."

against 913 in 1891. Only three of the islands had a population over 100 persons at last census. The population of the Great Barrier increased since 1891 from 262 to 307 persons; Waiheke shows a decrease from 215 to 166 persons. Europeans at the Chatham Islands decreased from 258 to 234.

AUSTRALASIAN COLONIES: ESTIMATED POPULATION ON 31ST DECEMBER, 1895.

	Males.	Females.	Totals.
Queensland	259,160	201,390	460,550
New South Wales ..	685,160	592,710	1,277,870
Victoria	605,176	576,593	1,181,769
South Australia	181,161	171,492	352,653
Western Australia ..	69,727	31,508	101,235
Tasmania	85,303	75,530	160,833
New Zealand	369,725	328,981	698,706

The Australasian Colonies as a whole contained a population on the 31st December, 1895, estimated at 4,233,616 persons, exclusive of the aboriginal natives of Queensland, South and Western Australia, and 39,854 New Zealand Maoris.

The population of Fiji was 120,245 persons—66,350 males and 53,895 females. These numbers include natives and imported labourers, besides people of European descent.

Increase of Population.

The increase of population during 1895 was 12,578. As the number of births exceeded the number of deaths by 11,683, the difference between that number and 12,578 represents the excess of arrivals over departures, amounting to 895.

There is good reason to believe that few of the births or deaths that occur remain unregistered. Where a limit of time is given within which a birth has to be registered, it follows as a matter of course that there will be occasional instances of neglect of the requirements of the law; but it would appear that such neglect is very exceptional, and that the number of unregistered events is so small as not appreciably to affect the numbers given.

The following shows the excess of births over deaths in each of the past ten years:—

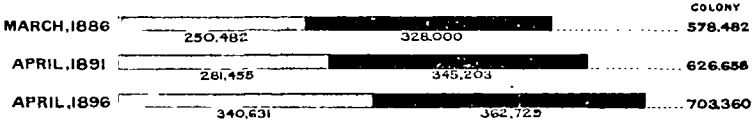
1886	13,164	1891	11,755
1887	12,998	1892	11,417
1888	13,194	1893	11,420
1889	12,685	1894	11,610
1890	12,284	1895	11,683

In 1895 the population of the colony was greater than in 1886 by 18·9 per cent. Nevertheless the excess of births over deaths for 1895 is less than for 1886 by 11·3 per cent.

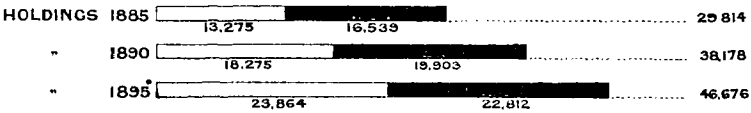
The excess of births over deaths in 1895 was equivalent to 1·69 per cent. of the mean population for the year, the actual increase being at the rate of 1·83 per cent.

A table is given showing the increase of population for eleven years. Although the large increase shown for 1893 was not maintained during 1894 and 1895, the arrivals in the colony during these

Movement of European Population 1886,1891,1896.

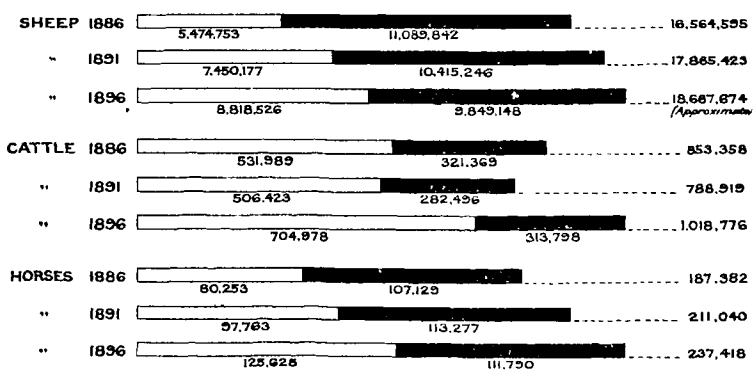


Occupied Holdings over one acre in extent.



Information as to Holdings not available for 1896.

Movement in Live Stock owned by Europeans 1886,1891,1896.



Particulars as to Maori population and stock not included above.

1896	NORTH ISLAND	SOUTH ISLAND &c.	TOTAL
NUMBER OF MAORIS ..... PERSONS..	37,331	2,523	39864
" " SHEEP	290115	24,291	314406
" " CATTLE	27,625	1,500	29125

Reference.

South, Stewart & Chatham Islands shewn thus ■

North Island □

T.M.Grant del.

last two years at all events exceeded the departures by more than three thousand people. Notwithstanding the attractions of the Australian goldfields, and other disturbing influences, the colony not only retained the population drawn to it in the years 1892 and 1893, but also absorbed 3,148 persons from other countries.

Year.	Estimated Population on the 31st December.	Increase during the Year			Centesimal Increase on Population of Previous Year.
		By Excess of Births over Deaths.	By Excess of Immigration over Emigration.*	Net Increase.	
1885	575,172	13,612	−2,744†	10,868	1·93
1886	589,386	13,164			
1887	603,361	12,998			
1888	607,380	13,194			
1889	616,052	12,685	−17,194†	58,886	10·24
1890	625,508	12,284			
1891	634,058	11,755			
1892	650,433	11,417	4,958	16,375	2·58
1893	672,265	11,420	10,412	21,832	3·36
1894	686,128	11,610	2,253	13,863	2·06
1895	698,706	11,683	895	12,578	1·83

It will be observed that in the period 1885 to 1891 the total increase of the population was less than the natural increase by excess of births over deaths, owing to the fact that the loss by departures was greater than the gain by arrivals. But during the four years 1892, 1893, 1894, and 1895 the colony gained 18,518 persons by excess of immigration, besides the natural increase for those years.

Arrivals and Departures.

The number of persons who arrived in the colony in the year 1895 was 21,862, a decrease of 3,375 on the number for the previous year. Of the arrivals in 1895, 19,561 persons were classified as adults, being above the age of twelve years, and 2,301 as children. The total number of males was 14,181, and of females 7,681. The arrivals from the United Kingdom numbered 2,365, from Victoria 4,365, from New South Wales 13,209, from Tasmania 999. Thus the arrivals from Australia amounted to 18,573. Besides these, 301 persons came from Fiji, and 623 from the South Seas and other ports, including arrivals by mail-steamers from San Francisco.

The practice of nominating immigrants to be brought out partly at the Government expense has been discontinued since the 16th December, 1890, and there was no free immigration in the year 1895.

Two hundred and fourteen Chinese arrived in and 170 left

* Corrected in accordance with census results of 1886 and 1891. † The amount of loss by departures, though correct in the aggregate, cannot be allocated with exactness to the respective years. † Loss.

the colony during 1895, the number of arrivals thus exceeding the departures by 44.

The following table shows the immigration for twenty-two years —stating separately arrivals from the United Kingdom, the Australian Colonies, and other places. The arrivals during 1893 and 1894 will be found to exceed those in any other years comprised in the period except 1874 and 1875, when the numbers were largely swollen by assisted immigrants from the United Kingdom; and it will also be noticed that the years 1893 and 1894 had by far the largest numbers of arrivals from Australia:—

Year.	Arrivals from United Kingdom.			From Australian Colonies.	From Other Places.	Total Arrivals.
	Government or Assisted.	Unassisted.	Total.			
1874 ..	31,774	4,626	36,400	5,504	2,061	43,965
1875 ..	18,324	3,444	21,768	6,328	3,641	31,737
1876 ..	8,242	2,890	11,132	4,956	2,326	18,414
1877 ..	5,298	2,337	7,635	4,500	852	12,987
1878 ..	6,580	2,629	9,209	6,348	706	16,263
1879 ..	10,311	6,424	16,735	6,413	809	23,957
1880 ..	2,689	5,825	8,514	5,899	741	15,154
1881 ..	103	3,404	3,507	5,579	602	9,688
1882 ..	726	2,479	3,205	6,975	765	10,945
1883 ..	5,902	4,496	10,398	8,056	761	19,215
1884 ..	3,888	5,972	9,860	9,064	1,097	20,021
1885 ..	1,072	6,169	7,241	7,899	1,059	16,199
1886 ..	917	5,976	6,893	8,133	1,075	16,101
1887 ..	1,286	3,620	4,906	8,035	748	13,689
1888 ..	485	3,653	4,138	8,784	684	13,606
1889 ..	91	3,184	3,275	11,212	905	15,392
1890 ..	144	2,668	2,812	11,539	677	15,028
1891 ..	44	2,391	2,435	11,144	852	14,431
1892 ..	..	2,555	2,555	14,674	893	18,122
1893 ..	..	2,929	2,929	22,351	855	26,135
1894 ..	..	2,846	2,846	21,291	1,100	25,237
1895 ..	..	2,365	2,365	18,573	924	21,862

Here the arrivals increase from 15,028 in 1890 to 21,862 in 1895, and those from Australia from 11,539 in the former year to 18,573 in the latter.

In 1881 an Act was passed imposing a tax on every Chinese landing in the colony, except in the case of any one of the crew of a vessel not intending to remain. The object of the Act—so to hamper Chinese immigration as to prevent the number of Chinese in the colony from increasing—was until 1894 successfully attained.

The "Chinese Immigrants Act Amendment Act, 1896," raised the poll-tax on Chinese immigrants from £10 to £100 per head, and limited the number of Chinese passengers that may be carried by vessels to this colony to one for every 200 tons burthen. This Act is to remain in force only until the "Asiatic Restriction Act, 1896," which has been reserved for Her Majesty's assent, and which has a wider scope, comes into operation. In 1881 the Chinese population amounted to 5,004, in 1886 the number had fallen to 4,542, and at the census of 1891 there were 4,444 Chinese in the colony. The number in April, 1896, was only 3,711 persons, so that a continuous decrease is shown at each enumeration since the year 1881.

The numbers of arrivals and departures of Chinese in each of the past fifteen years were :—

Year.	Arrivals.	Departures.	Year.	Arrivals.	Departures.
1881	1,029	371	1889	16	104
1882	23	168	1890	18	169
1883	44	297	1891	5	160
1884	84	306	1892	58	197
1885	94	164	1893	116	134
1886	239	181	1894	278	143
1887	354	246	1895	214	170
1888	308	211			

Laws restricting Chinese immigration have been passed in the Australian Colonies as well as in New Zealand.

In New South Wales, an Act of 1888 raised the poll-tax imposed in 1881 to £100, and vessels were prohibited from carrying to the colony more than one Chinese passenger to every 300 tons. Chinese cannot engage in mining without express authority, and are not allowed to become naturalised. The Act is stated to have resulted in the complete stoppage of Chinese immigration.

Every effort is made to obtain correct statements of the migration to and from the colony, but there is still difficulty in regard to the departures. The arrivals are doubtless correct, but many people leave the colony for Australia without booking their passages, paying their fares on board after the steamer has cleared: in these cases the returns from the Customs authorities are deficient. The difficulty is in great measure overcome by an arrangement under which the pursers of the intercolonial steamers belonging to the Union Steamship Company, on their return to this colony, post to the Registrar-General a statement of the number of passengers on the previous outward voyage. But during any period of cheap fares and keen competition between rival companies steamers may carry more passengers than should lawfully be taken, and of the number in excess no return is likely to be made.

The number of persons who left this colony in 1895 was 20,967, of whom 18,977 were over and 1,990 were under twelve years of age. The males numbered 13,746, and the females 7,221. The departures for the United Kingdom amounted to 1,703 persons. 3,108 left for Victoria, including 1 for South Australia, 14,781 for New South Wales and Queensland, and 488 for Tasmania—making altogether 18,377 for Australia. 183 persons left for Fiji, and 704 for other ports (including passengers for San Francisco).

The total excess of arrivals over departures — 895 persons — is made up as under :—

	Excess of Arrivals.
From United Kingdom	662
" Australia	196
" Other places	37

Comparing the arrivals and departures for 1895 with those of the previous year, it will be observed that the arrivals fell from 25,237 to 21,862, and the departures from 22,984 to 20,967. But

no fewer than 18,377 persons left New Zealand last year for Australia, very many, no doubt, tempted by the reported rich finds of gold in Western Australia; notwithstanding which large exodus, there was (according to the returns) an excess of arrivals in New Zealand from the continent in the year amounting to 196, so that this colony held its own against Australia in spite of special inducements for miners to leave.

The following table shows the recorded movements of population between New Zealand and the United Kingdom in each of the past ten years:—

	United Kingdom.	
	Arrivals therefrom.	Departures thereto.
1886	6,893	2,385
1887	4,906	2,086
1888	4,138	1,964
1889	3,275	2,039
1890	2,812	1,863
1891	2,435	1,705
1892	2,555	1,612
1893	2,929	1,583
1894	2,846	1,669
1895	2,365	1,703
Totals	35,154	18,609

These figures, which may be taken as correct, show a gain of 16,545 persons through intercourse with the United Kingdom; and the total gain to the colony from all places during the ten years by excess of arrivals over departures, totalled 1,324 persons. It follows, therefore, that the loss to Australia and other places was 15,221 during the decennial period, of which number at least 90 per cent. must have gone to Australia. The figures for 1892–95 give a different result for the last four years of the decennium, showing a net gain from the Australian passenger-traffic of 14,078 persons. Of the loss prior to 1892, by far the largest in any one year occurred in 1888, when the expenditure of loan-money by the General Government was suddenly reduced by one-half.

The returns published by the Board of Trade do not distinguish between the departures from the United Kingdom for New Zealand and those for Australia. The departures for Australasia as a whole only are given. In 1895 these amounted to 10,809. The number of persons arriving in New Zealand direct from the United Kingdom was 2,365, or equal to nearly 22 per cent. of the entire direct emigration from the United Kingdom to the Australasian Colonies. This number does not represent all the persons who came from the United Kingdom to this colony, as many travelled by way of the Suez Canal or San Francisco, and thus appeared as arrivals either from Australia or from foreign ports.

According to the foregoing table the arrivals from the United Kingdom fell in number in regular annual sequence, from 6,893 in 1886 to 2,435 in 1891; but New Zealand has since then somewhat increased her gain of population from the Old Country, the arrivals for

1892 numbering 2,555, for 1893 2,929, for 1894 2,846, and for 1895 2,365 persons; while the departures for the United Kingdom fell year by year from 1889 to 1893, and rose only slightly in 1894 and 1895. In 1895 the excess of arrivals from the United Kingdom over the departures thereto was, however, only 662 persons. In 1891 it was 730 persons.

There has been of late years a large annual decrease in the number of persons who leave the United Kingdom for these southern colonies :—

Year.	Emigration from United Kingdom to Australasia.	Arrivals in New Zealand from United Kingdom.	Arrivals in New Zealand per 100 Departures for Australasia from United Kingdom.
1886	44,055	6,893	15·65
1887	35,198	4,906	13·94
1888	31,725	4,138	13·04
1889	28,834	3,275	11·36
1890	21,570	2,812	13·03
1891	19,957	2,435	12·20
1892	16,183	2,555	15·79
1893	11,412	2,929	25·67
1894	11,151	2,846	25·52
1895	10,809	2,365	21·88

As the population of New Zealand (exclusive of Maoris) comprises no more than 16·52 per cent. of the population of Australasia, not including Fiji, it is evident from the above figures that this colony during 1893, 1894, and 1895 offered greater attractions to emigrants than did Australia; and it must be remembered that, as remarked before, the above numbers do not include persons who arrived from England *viâ* Australia and the United States.

The following shows the immigration and emigration for each of the Australasian Colonies during the year 1895. The emigration figures are, for all the colonies, admittedly imperfect, as no record is obtained of a number of departures by sea :—

Colony.	Arrivals, 1895.	Departures, 1895.	Excess of Arrivals over Departures, 1895.
Queensland	30,066	24,393	5,673
New South Wales	129,217	126,658	2,559
Victoria (by sea only)	81,199	88,886	−7,687*
South Australia	65,944	66,677	−733*
Western Australia	29,523	11,129	18,394
Tasmania	18,767	17,168	1,599
New Zealand	21,862	20,967	895

* Excess of departures.

VITAL STATISTICS.

Births.

The births registered in the colony during 1895 numbered 18,546, or at the rate of 26·78 per 1,000 of the mean population. Numerically, the births registered in 1895 are found to be only 18 in excess of the number for 1894; nevertheless the birth-rate fell from 27·28 in the former year to 26·78 in the latter. From the year 1884, when the births were 19,846, to 1892, when they numbered only 17,876, there was a regular annual decrease, notwithstanding the increase of population. In 1893 came a change; but the numerical increase in the registrations of births has not been sufficient to raise the birth-rate.

That there should be a continuous fall in the birth-rate of New Zealand is only what might be expected, as the same process is going on in Australia; but the fall here has been greater, and it is noticeable that New Zealand has now a lower birth-rate than any of the colonies of Australia, except Western Australia, to which colony there has during the past few years been a large influx of population, consisting mostly of single men.

The following table shows that, with increasing population and, since 1886, a numerical increase of marriages (there was a slight decrease in 1895), there has been for many years an annual decrease in the birth-rate :—

Year.	Mean Population (excluding Maoris).	Number of Marriages.	Number of Births.	Births per 1,000 of the Population.
1881	493,482	3,277	18,372	37·95
1882	509,309	3,600	19,009	37·32
1883	529,292	3,612	19,202	36·28
1884	552,590	3,800	19,846	35·91
1885	573,362	3,813	19,693	34·35
1886	582,117	3,488	19,299	33·15
1887	596,374	3,563	19,135	32·09
1888	605,371	3,617	18,902	31·22
1889	612,716	3,632	18,457	30·07
1890	620,780	3,797	18,278	29·44
1891	629,783	3,805	18,273	29·01
1892	642,245	4,002	17,876	27·83
1893	661,349	4,115	18,187	27·50
1894	679,196	4,178	18,528	27·28
1895	692,417	4,110	18,546	26·78

A fall in the birth-rate in a young country is to a certain point a natural result of the increase in the proportion of the population under twenty-one years of age; but in New Zealand the proportion under twenty-one at the census of 1891 was found to be slightly lower than in 1886, so that there must be further reasons to account for such a decrease in the actual number of births as is found up to the year 1893.

Inquiry was made of District Registrars to discover whether many births escaped registration, through the colony not being sufficiently subdivided for registration purposes; but the replies did not tend to show that the decrease could be assigned to this cause,

though it is nevertheless desirable to subdivide further when representations are made of fresh requirements.

Whenever it is reported to the Registrar-General that a birth has not been registered, an authority is issued to the District Registrar to prosecute the responsible party for neglect. Registrars are all under instructions to watch closely for cases of negligence, so that proceedings may be taken. Twenty-seven convictions were secured in the year 1895, and fines inflicted.

The decrease in the birth-rate all over the civilised world has been freely and openly commented on of late, and the voluntary limitation of families is no doubt largely resorted to in communities where the spread of education has created a high standard of comfort in living, and multiplied wants to a great extent. In 1881 there were in New Zealand 5·72 births to every marriage in the previous year, and in 1895 the proportion had fallen to 4·24 births to each marriage.

It was ascertained, after the census of 1881 had been compiled, that the married women of reproductive age in the colony averaged 314 to every 100 of legitimate births, which is equal to an average of one birth to every married woman at the age for child-bearing in every 3·14 years. In 1886 the average was found, on calculation, to be 333 wives to 100 births, or an average of one birth to each wife in 3·33 years. In 1891 there were 17,635 legitimate births, and the number of married women at the time of the census at the period 15 to 45 years was 63,165, which gives an average of 358 wives to each 100 births, or, deducting one child in each case of twins, the average becomes 362 wives to every 100 births, being a birth to each wife every 3·62 years. The census results therefore prove that the average interval between each birth in the case of married women at the child-bearing ages advanced from 3·14 years in 1881 to 3·33 years in 1886, and 3·62 years in 1891; so that this factor must evidently be taken into account in considering the question of the causes of the falling birth-rate.

The fall in the birth-rates of the Australian Colonies during a period of eleven years is shown in the following table:—

BIRTH-RATES PER 1,000 OF POPULATION.

Colony.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Queensland ..	36·66	40·21	38·09	37·77	36·27	40·95	36·35	35·84	33·73	31·86	32·85
New South Wales ..	37·64	37·03	36·42	36·18	33·73	35·35	34·50	34·41	32·23	31·47	30·66
Victoria	30·74	31·23	32·30	32·49	32·95	33·60	33·57	32·54	31·25	29·16	28·57
South Australia ..	37·30	35·32	34·63	33·34	32·37	32·75	33·92	32·32	31·71	30·49	30·23
Western Australia ..	35·22	39·21	37·34	35·88	37·14	32·55	34·85	33·01	34·14	27·49	25·62
Tasmania ..	35·08	34·15	33·87	33·10	31·94	33·49	33·37	32·48	33·92	31·13	30·10
New Zealand ..	34·35	33·15	32·09	31·32	30·07	29·44	29·01	27·83	27·50	27·28	26·78

In the year 1880 New Zealand had the highest birth-rate of any of these colonies, 40·78; but since 1887 the position has been re

versed, and the rate is now the lowest of all, except Western Australia, where the conditions of population are abnormal as yet.

In the United States the birth-rates per 1,000 for 1880 and 1890 were respectively 36·0 and 30·7; in England and Wales, 34·2 and 30·2; in Scotland, 33·6 and 30·2; in Ireland, 24·7 and 22·3; in France, 24·5 and 21·8; in Belgium, 31·1 and 28·7; in the German Empire, 37·6 and 35·7; in Austria, 38·0 and 36·7; in Switzerland, 29·6 and 26·6; in Denmark, 31·8 and 30·6; in Norway, 30·7 and 30·3; and in the Netherlands, 35·5 and 32·9.

The birth-rates for eight years in Great Britain and certain countries of the European Continent are given from the report of the Registrar-General of England. The rates in England and Wales, and in Scotland, are higher than those in New Zealand, but the rate for Ireland is lower. For 1890 and following years France has the lowest rate of all quoted.

BIRTH-RATES IN EUROPEAN COUNTRIES, 1887 TO 1894.

Countries.	Number of Births per 1,000 of Mean Population.							
	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Hungary	44·1	43·8	43·7	40·3	42·3	40·3	42·5	..
Austria	38·2	37·9	37·9	36·7	38·1	36·2	37·9	..
Italy	39·0	37·6	38·4	35·9	37·3	36·3	36·6	35·7
German Empire	36·9	36·6	36·4	35·7	37·0	35·7	36·7	35·8
Netherlands	33·7	33·7	33·2	32·9	33·7	32·0	33·8	32·7
England and Wales ..	31·9	31·2	31·1	30·2	31·4	30·5	30·8	29·6
Scotland	31·8	31·3	30·9	30·4	31·2	30·8	31·0	30·1
Norway	30·8	30·8	29·7	30·3	30·9	29·6	30·7	29·7
Sweden	29·7	28·8	27·7	28·0	28·3	27·0	27·4	..
Belgium	29·4	29·1	29·5	28·7	29·6	28·9	29·5	29·0
Switzerland	27·9	27·7	27·6	26·6	28·3	28·1	28·5	28·2
France	23·5	23·1	23·0	21·8	22·6	22·1	22·9	..
Ireland	23·1	22·8	22·7	22·3	23·1	22·5	23·0	22·9

The male births in New Zealand in 1895 numbered 9,493, and the female 9,053: the proportion was thus 104·86 males to 100 females. In 1894 the proportion was 104·59 males, and in 1893, 104·88. There are on an average more male to female births in each of the Australasian Colonies than in England, but the proportion of male births is still greater in many European countries.

There were 198 cases of twin births (396 children) in 1895. The number of children born was 18,546; the number of mothers was 18,348: thus on an average 1 mother in every 93 gave birth to twins. In 1894 the proportion was one in 103, in 1893 one in 95, in 1892 one in 102, in 1891 one in 101, and in 1890 one in 94.

The births of 835 children were illegitimate: thus 45 in every 1,000 children born were born out of wedlock.

The following table gives the rates of illegitimacy in each of the Australasian Colonies. The rate in New Zealand is less than in

any other of the Australasian Colonies except South and Western Australia:—

PROPORTION OF ILLEGITIMATE BIRTHS IN EVERY 100 BIRTHS.

Year.	Queensland.	New South Wales.	Victoria.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1885	4·08	4·60	4·36	2·42	..	4·55	3·20
1886	3·97	4·65	4·75	2·38	..	4·13	3·12
1887	4·49	4·59	4·78	2·49	..	3·40	3·23
1888	4·13	5·08	4·80	2·67	..	3·62	3·05
1889	4·68	5·33	4·97	2·47	..	4·02	3·32
1890	4·85	5·26	5·09	2·50	..	4·05	3·30
1891	4·65	5·36	5·36	2·93	..	3·72	3·49
1892	5·05	5·71	5·59	2·93	5·89	4·75	3·32
1893	4·97	6·16	5·46	2·84	4·17	4·41	3·70
1894	4·52	6·14	5·50	3·05	4·66	5·09	3·80
1895	4·93	6·51	..	3·13	4 47	4·97	4·50

The rates in the Colonies of Queensland, New South Wales, Victoria, Western Australia, and Tasmania are somewhat higher than the rate in England, which was 4·3 in 1894. The rate for New Zealand was slightly higher. In Scotland the rate was as high as 7·6 in the year 1890. In Ireland it was only 2·7 in 1891. Of European continental countries Austria has the highest rate, 14·7. In the German Empire it is 9·3, in France 8·1, in Italy 6·8, and in Switzerland 4·6.

An important Act was passed in 1894, entitled the Legitimation Act, which makes provision for the legitimation of children born before marriage on the subsequent marriage of their parents. Under this Act any child born out of wedlock, whose parents afterwards marry, is deemed to be legitimised by such marriage on the birth being registered in the manner prescribed by the Act. For legitimation purposes Registrars must register a birth when called upon to do so by any person claiming to be the father of an illegitimate child; but such person is required to make a solemn declaration that he is the father, and that at the time of the birth there existed no legal impediment to his marriage with the mother of the child. He has also to produce the evidence of his marriage. It will thus be seen that in cases dealt with under the Act registration becomes the test of legitimacy. In the December quarter of 1894, 11 children were legitimised; in 1895 the number was 68. It appears likely that the Act will often be taken advantage of in case of half-castes.

It is held that the average number of children to a marriage may be ascertained by comparing the total of legitimate births for a series of years with the total of marriages during a series of years of the same number, but beginning one year earlier; for, although in the earlier years births will be included that are the fruit of marriages solemnised prior to the commencement of the period, yet

there will be omitted the children born subsequently to the period of parents married within the given time. This method probably gives results approximately true :—

Year.	Marriages.	Legitimate Births.	Proportion of Births to every Marriage solemnised in the Preceding Year.
1890	3,797	..	..
1891	3,805	17,635	4·64
1892	4,002	17,283	4·54
1893	4,115	17,514	4·37
1894	4,178	17,824	4·33
1895	..	17,711	4·24
Sums and proportion (five years)	19,897	87,967	4·42

For the last five years the average number of births per marriage has been 4·42, the number falling during the period from 4·64 in 1891 to 4·24 in 1895. In the Australian Colonies a similar decrease is noticeable. It has been remarked that in all the Australian Colonies, except Tasmania, and possibly New South Wales, the average number of children to a marriage tends to decrease. In Victoria the number for the year 1880 was 4·99, but fell to 4·07 in 1892. In New South Wales the figures are 5·0 for 1880, and a mean of 4·70 for the period 1890–92.

The following statement of the average number of children to a marriage in various European countries is taken from the Victorian Year-book for 1894 :—

	Children to each Marriage.		Children to each Marriage.
Ireland ..	.. 5·46	England	.. 4·16
Italy ..	.. 4·56	Sweden ..	.. 4·01
Scotland ..	.. 4·43	Denmark	.. 3·55
Holland ..	.. 4·34	France ..	.. 2·98
Belgium ..	.. 4·21		

The excess per cent. of births over deaths in each of the Australasian Colonies for a mean of ten years ending with 1894, is stated in the Victorian Year-book as under :—

EXCESS PER CENT. OF BIRTHS OVER DEATHS.

New Zealand ..	.. 208	Tasmania ..	.. 131
South Australia ..	.. 170	Western Australia	.. 116
New South Wales	.. 156	Victoria	.. 111
Queensland ..	.. 142		

For the year 1894 New Zealand again occupies the first place.

NATURALISATION.

Aliens residing in the colony may, on taking the oath of allegiance to Her Majesty, obtain letters of naturalisation entitling them to enjoy all the rights and privileges that a natural-

born subject of the United Kingdom can enjoy or transmit within this colony. Fifty-seven aliens were naturalised in 1895.

As the diversity of nationalities is considerable, the following statement is given of the number belonging to each :—

NUMBER OF ALIENS NATURALISED IN 1895.

Natives of		Natives of	
China	17	Russia—	
German Empire	15	Poland	1
Sweden and Norway	9	Finland	3 } 4
Syria	6	Turkey	1
Denmark	4	Austria	1

The number of natives of each country naturalised during the last fourteen years is shown hereunder :—

Natives of		Natives of	
Germany	974	Netherlands	27
Sweden and Norway	670	Greece	22
Denmark	503	Portugal	19
China	315	United States of America ..	13
Switzerland	110	Belgium	11
Russia	111	Other countries	60
Italy	104		
Austria	96	Total ..	3,083
France	48		

By section 2 of "The Aliens Act Amendment Act, 1882," repealed and re-enacted by section 2 of "The Aliens Act Amendment Act, 1892," it is provided that when the father, or mother being a widow, has obtained naturalisation in the colony, every child who during infancy has become resident with them in New Zealand shall be deemed to be naturalised and shall have the rights and privileges of a natural-born subject.

MARRIAGES.

The number of marriages in 1895 was 4,110, a decrease of 68 on the number in 1894. The marriage-rate was 5·94 per 1,000 persons living, being lower than the rates for the years from 1890 to 1894 inclusive, but the same as the rates for 1889. New Zealand has not, so far, regained the position she held in 1874, when the figures for the Australasian Colonies stood as follow :—

MARRIAGE-RATES IN 1874.

New Zealand	8·81	per 1,000 of mean population.
Queensland ..	8·62	" "
South Australia	8·00	" "
New South Wales ..	7·70	" "
Western Australia ..	6·96	" "
Tasmania	6·83	" "
Victoria	6·33	" "

The respective rates for the Australasian Colonies for the last ten years are shown in the following table :—

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MARRIAGES PER 1,000 OF THE POPULATION.

Year.	Queensland.	New South Wales.	Victoria.	South Australia.	Western Australia.	Tasmania.	New Zealand.
1886 ..	8·67	7·99	7·84	6·24	7·98	7·26	5·99
1887 ..	8·21	7·42	7·62	6·31	7·58	6·71	5·97
1888 ..	8·63	7·37	8·03	6·70	7·18	6·58	5·97
1889 ..	8·37	6·76	8·14	6·47	6·99	6·50	5·94
1890 ..	8·49	7·14	8·21	7·06	5·80	6·64	6·12
1891 ..	7·18	7·39	7·69	7·31	8·00	6·63	6·04
1892 ..	6·67	6·77	6·64	6·51	7·29	6·51	6·23
1893 ..	5·91	6·40	5·99	6·26	6·34	5·51	6·22
1894 ..	5·70	6·20	5·98	6·09	6·24	5·43	6·15
1895 ..	6·23	6·35	6·00	5·88	6·83	5·32	5·94

Taking this range of years, the marriage-rate is shown to be less in New Zealand than in the colonies of Australia, and it is also lower than in most European countries.

MARRIAGES IN EVERY 1,000 OF THE POPULATION.

Hungary,	1893	.. 9·3	Switzerland,	1894	.. ..	7·4
German Empire,	1894	.. 7·9	Denmark,	1894	.. ..	6·9
Austria,	1893	.. 7·9	Scotland,	1894	.. ..	6·7
Belgium,	1894	.. 7·5	Norway,	1894	.. ..	6·4
France,	1893	.. 7·5	Sweden,	1893	.. ..	5·6
England and Wales,	1894	.. 7·5	Spain,	1887	.. ..	5·5
Italy,	1894	.. 7·5	Ireland,	1894	.. ..	4·7
Netherlands,	1894	.. 7·2				

The greatest number of marriages in 1895 occurred in the autumn quarter, ending the 30th June, and the smallest number in the winter quarter, ending the 30th September.

Of the marriages solemnised in 1895, 3,673 were between bachelors and spinsters, 170 between bachelors and widows, 176 between widowers and spinsters, and 91 between widowers and widows. Divorced men and women have been classified as bachelors or spinsters: 8 divorced men and 10 divorced women were married during the year.

The proportion of each class of marriage to all the marriages varies but little from year to year, as shown by the figures for 1888 and 1895.

PROPORTION PER 100 MARRIAGES.

Marriages between	1888.	1895.
Bachelors and spinsters	86·04	89·37
Bachelors and widows	4·75	4·14
Widowers and spinsters	6·47	4·28
Widowers and widows	2·74	2·21
	100·00	100·00

The number given above does not include marriages where both parties are of the aboriginal native race, such persons being exempted from the necessity of complying with the provisions of the Marriage Act, although at liberty to take advantage thereof. Only 6 mar-

riages in which both parties were Maoris were contracted in 1895 in terms of the Act.

Of the marriages in the past year, 22·74 per cent. were solemnised by ministers of the Church of England, 24·32 per cent. by ministers of the Presbyterian Churches, 15·69 per cent. by ministers of the Wesleyan and other Methodist Churches, 11·19 per cent. by ministers of the Roman Catholic Church, 7·29 per cent. by ministers of other denominations, and 18·77 per cent. by Registrars.

The following shows the proportions of marriages by ministers of the principal denominations in the past seven years, and the percentages of these denominations to the total population :—

Denomination.	Percentage of Marriages.							Percentage of Denomination to Total Population in 1891.
	1889.	1890.	1891.	1892.	1893.	1894.	1895.	
Church of England ..	23·11	21·66	22·18	20·78	23·06	22·86	22·74	40·51
Presbyterians ..	26·75	27·59	27·23	29·38	26·58	25·30	24·32	22·62
Wesleyans and other Methodists	15·08	15·58	14·72	14·82	16·13	15·99	15·69	10·14
Roman Catholics ..	10·40	10·45	10·07	9·74	8·99	10·08	11·19	13·96
Other denominations	5·23	5·27	5·67	6·34	6·66	6·65	7·29	12·77
By Registrars ..	19·43	19·45	20·13	18·94	18·58	19·12	18·77	
	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00

It will be observed that the proportions of marriages by ministers of the Presbyterian and Wesleyan Churches are greater than the percentages of these denominations to the total population. Clearly, therefore, among the persons married by them are included members of other religious bodies, while many of those married before Registrars must be nominally members of the Church of England. As all marriages between members of the Roman Catholic Church are, by requirement of that church, solemnised by the ministers thereof, it appears that fewer marriages in proportion to their numbers occur among Roman Catholics than among members of other bodies. The percentage of marriages (11·19) solemnised by the Roman Catholic clergy in 1895, although higher than in any one of the years 1891–94, was yet much below the proportion borne by Roman Catholics to the total population—viz., 13·95 at the census of 1886, and 13·96 in 1891. Marriages by Registrars, which increased from 10·50 per cent. in 1875 to 23·22 per cent. of the total in 1887, were 18·77 per cent. in 1895.

Of the men married in 1895, 39, or 9·48 in every 1,000, and of the women 39 (the same number), signed the register by marks.

The illiteracy of the people, as measured by the proportion of married persons who affix marks instead of signatures to the marriage register, has greatly decreased of late, having fallen since 1881

from 32·04 per 1,000 among men to 9·48 per 1,000, and from 57·98 per 1,000 to 9·48 per 1,000 among women. This is shown in a very striking manner by the following table:—

PERSONS IN EVERY 1,000 MARRIED WHO SIGNED BY MARK.

Denomination.	1881.		1886.		1890.		1895.	
	M.	F.	M.	F.	M.	F.	M.	F.
Church of England	16·59	27·15.	9·33	12·00	6·08	4·86	3·21	3·21
Presbyterians ..	10·25	29·61	9·79	7·62	8·59	15·27	5·00	1·00
Wesleyan and other Methodists	32·41	41·79	6·33	14·78	15·20	10·14	4·65	4·65
Roman Catholics ..	117·78	133 33	46·45	65·57	35·26	42·82	17·39	28·26
Other denominations	10·36	20·72	11·49	22·99	15·00	0·00	10·00	10·00
By Registrars ..	39·22	93·51	35·98	62·03	29·77	40·60	22·02	20 73
Total marriages	32·04	57·98	19·21	28·96	16·33	19·23	9·48	9·48

The proportion of illiterates in 1895 was greatest, at least of the males, among those married before Registrars, but it must be remembered that, as previously stated, a large proportion of the persons married before Registrars are nominally members of the Church of England. Previously the proportion was largest among Roman Catholics; but since 1881 it has, as shown by the table, most remarkably decreased.

Of the persons married in 1895, 86 bridegrooms and 787 brides were under 21 years of age—one of the bridegrooms was between 17 and 18 years of age, and 11 between 18 and 19. Of the brides, 4 were under 15 years, 2 were between 15 and 16, and 22 between 16 and 17 years of age. The proportion of men married is greatest at the ages of 25 to 30, and of women at from 21 to 25 years.

The following are the proportions of men and women married at each age-period to every 100 marriages in the years 1888 and 1895:—

Age.	1888.		1895.	
	M.	F.	M.	F.
Under 21 years	1·85	24·30	2·09	19·15
21 and under 25	28·17	42·05	24·14	40·14
25 „ 30	33·81	21·15	37·81	26·08
30 „ 40	26·02	8·98	26·40	11·34
40 „ 50	6·69	2·74	6·18	2·58
50 „ 60	2·52	0·61	2·55	0·49
60 „ 70	0·88	0·14	0·66	0·22
70 and upwards	0·06	0·03	0·17	..

Registrars of Marriages are prohibited by law from issuing certificates for the marriage of minors without the consent of their parents or lawful guardians, if there be any in the colony. If a declaration be made in any case that there is no parent or lawful guardian in the colony, then a certificate may be issued after the expiration of fourteen days following the date on which the notice of intended marriage is given.

A marriage may not be solemnised except after the delivery to the minister or Registrar who officiates of a certificate issued by a Registrar authorising such marriage, and if any persons knowingly and wilfully intermarry without such certificate the marriage is null and void; and no clergyman or minister of any denomination is empowered to solemnise marriages until his name has been placed on the Registrar-General's list of officiating ministers for the year.

The ages at which persons may contract binding marriages are the same as in England—12 years for females and 14 for males. Marriage may be contracted at earlier ages than those stated, but would be voidable at the discretion of either of the parties upon reaching the age of 12 or 14, as the case may be, and without the necessity of proceedings in Court.

Although in New Zealand the age at which girls may legally marry is as above; nevertheless, by the criminal law, to unlawfully carnally know a girl under the age of 16 years is now a punishable offence. The age of consent was raised from 15 to 16 by statute passed this year (1896).

The ages at which persons can contract binding marriage in the United States are 21 for males and 18 for females, according to the "Annual Statistician" (McCarty, San Francisco). In France and Belgium the ages are 18 and 15 respectively; in Germany, 18 and 14; in Austria, 14 and 14; and in Russia, 18 and 16.

The average age of the men married in this colony in 1895 was 29·90 years, and of the women, 25·05 years. In England the mean age of those whose ages were stated was (in the year 1894) 28·41 years for men, and 26·15 years for women. Thus the average age at marriage in the colony is higher for men, but lower for women, than the age in England.

The proportion of bridegrooms under 21 is much greater in England than in New Zealand; but the proportion of brides under 21 is greater in the colony.

In England, in 1894, of every 1,000 bridegrooms whose ages were stated, 55 were under 21 years of age, and of every 1,000 brides 181 were under 21 years of age. In New Zealand, in 1895, the proportions were 21 bridegrooms and 191 brides in every 1,000 married. While in New Zealand the proportion of bridegrooms under 21 years of age fluctuates within narrow limits, the proportion of brides under 21 years of age is steadily decreasing: this is shown by the following proportions for each sex under 21 years of age in every 100 married:—

Year.	Bridegrooms under 21 in every 100.	Brides under 21 in every 100.	Year.	Bridegrooms under 21 in every 100	Brides under 21 in every 100.
1884	1·87	27·10	1890	1·89	22·75
1885	1·97	26·49	1891	1·55	20·79
1886	1·95	26·09	1892	1·62	20·14
1887	1·91	25·49	1893	1·75	19·73
1888	1·85	24·30	1894	1·44	19·53
1889	1·62	23·02	1895	2·09	19·15

DEATHS.

The deaths in 1895 numbered 6,863, being equivalent to a rate of 9·91 in every 1,000 persons living. This is lower than the rate in 1894 (10·19) and in the three preceding years, but higher than the rate in 1890, which was 9·66 per 1,000 persons.

The death-rate in New Zealand contrasts very favourably with those in the other Australasian Colonies and in European countries, and shows how healthful is the climate of the colony. The following table gives the death-rates for a series of years in the several countries named :—

Country.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
New Zealand	10·54	10·29	9·43	9·44	9·66	10·35	10·06	10·23	10·19	9·91
Queensland	17·29	14·56	14·66	15·44	14·98	12·77	12·66	13·34	12·08	11·38
New South Wales ..	14·89	13·15	13·54	13·42	12·90	14·24	13·22	13·25	12·30	11·79
Victoria	15·15	15·70	15·34	17·54	16·10	16·24	13·63	14·11	13·13	13·25
South Australia* ..	13·38	12·77	12·52	11·49	12·40	13·26	11·38	13·42	11·64	11·25
Western Australia ..	21·56	16·83	15·91	14·19	11·26	16·96	16·63	15·27	14·00	17·32
Tasmania	14·58	15·45	14·11	14·10	14·74	15·00	13·53	13·47	12·43	11·38
England	19·3	18·8	17·8	17·9	19·5	20·2	19·0	19·2	16·6	..
Scotland	18·6	18·7	17·6	18·0	19·7	20·7	18·5	19·4	17·2	..
Ireland	17·9	18·3	18·0	17·5	18·2	18·4	19·4	17·9	18·2	..
Denmark	18·2	18·3	19·7	18·6	19·0	20·0	19·4	18·9	17·5	..
Norway	16·1	16·0	16·9	17·4	17·9	17·5	17·7	16·4	16·9	..
Sweden	16·6	16·1	16·0	16·0	17·1	16·8	17·9	16·8	..	..
Austria	29·4	28·9	29·2	27·3	29·4	27·9	28·8	27·1	..	..
Hungary	31·4	33·5	31·7	29·9	32·4	33·1	35·0	31·1	..	..
Switzerland	20·7	20·2	19·9	20·3	20·9	20·7	19·3	20·5	20·7	..
German Empire ..	26·2	24·2	23·8	23·8	24·4	23·4	24·1	24·6	22 3	..
Netherlands	21·5	19·7	20·4	20·1	20·5	20·7	21·0	19·2	18·5	..
France	22·5	22·0	21·8	20·5	22·6	22·6	22 6	22·8	..	..
Italy	28·3	27·5	27·0	24·9	26·4	26·2	26·3	25·3	25·1	..

A comparison of the above rates appears to place the Australasian Colonies as a whole in the foremost rank for salubrity of climate and healthiness of people, New Zealand standing well in front of the rest; but it must be admitted that the ratio of all deaths to the 1,000 of population living in the middle of the year, although a good test of the sanitary condition of any one country year by year, and also useful for comparing the healthfulness of such countries as contain the same or nearly the same proportionate numbers of persons living at each age-period of life, cannot be regarded as a perfectly fair index when new countries are compared with old, or

*Excluding the Northern Territory.

even when new countries are compared one with another, should the proportions living at the several age-periods vary considerably.

The truest rates of mortality are obtained by ascertaining the proportion of deaths at each age-period to the numbers living at those ages.

Deaths and Death-rates of Four Principal Cities and their Suburbs.

In previous annual reports on the vital statistics of the four chief towns the central boroughs alone were dealt with, particulars respecting the suburbs not having been obtained. But this omission was held to be a grave defect, as the suburban death-rate may differ much from the death-rate at the centre. Steps were therefore taken early in 1895 to collect statistics of the suburban boroughs as well as of the four chief cities. As regards Auckland and Christchurch, the whole of the area usually recognised as suburban has not yet been brought under municipal government, and the statistics given below do not deal with such portions as still remain in road districts. The omission, however, is not very important, for there are in either case quite enough suburbs included within borough boundaries to give a fair idea of the death-rate of greater Auckland and greater Christchurch. As further boroughs are formed the vital statistics will be made to include them.

The total number of deaths registered in 1895 as occurring in the four chief towns, with their suburban boroughs, was 1,962—viz., 1,368 in the cities and 594 in the suburbs.

By including the suburbs the death-rate for the year is lowered at each of the four centres, the difference being considerable in Auckland (1·57) and in Dunedin (1·06). The rates for the year are,—

	Death-rate per 1,000 of Population.
Auckland City	14·87
" and five suburban boroughs ..	13·30
Wellington City	13·07
" and three suburban boroughs ..	12·50
Christchurch City	10·83
" and four suburban boroughs ..	10·54
Dunedin City	10·21
" and eight suburban boroughs ..	9·15

The death-rate is thus shown to be highest in Auckland and lowest in Dunedin, Wellington and Christchurch taking second and third places respectively. The death-rate for the colony is 9·91 per 1,000 of mean population. The four centres might each be expected to show a higher average than this, and in fact the excess is considerable both at Auckland and at Wellington, and is found, though in smaller measure, at Christchurch; but at Dunedin, owing to the slight mortality in the suburbs, the average falls decidedly short of the general rate for the colony.

If the number of deaths of infants under one year be excluded,

the mortality among the rest of the population would be in the following ratio to the 1,000 living for the years 1894 and 1895:—

	1894.	1895.
Auckland (including suburbs)	10·50	9·77
Wellington „	8·98	9·13
Christchurch „	7·85	7·98
Dunedin „	8·80	8·03

As in 1894, Dunedin now takes the third, and Christchurch the last place.

The degree of infantile mortality may be exhibited in the proportion of deaths of children under one year of age to every 100 births. For 1895 the proportions at the chief centres are,—

	1895.
Auckland (including suburbs)	14·14
Wellington „	12·43
Christchurch „	11·69
Dunedin „	6·05

Thus the proportion at Dunedin is considerably less than half that found at Auckland. Again, the percentage of deaths of children under 5 to the total number of deaths was, in Auckland, 34·62; in Wellington, 38·11; in Christchurch, 31·70; in Dunedin, only 19·60. The total of deaths under 5 is 615, or 31·35 per cent. of all deaths, as against 575 and 29·28 for 1894. The deaths of persons of 65 and upwards numbered 345 last year; in 1894 they were 377.

Excluding suburbs, and dealing only with the deaths in the four cities or central boroughs, the deaths and death-rates for three years are,—

Cities (excluding Suburbs).	Deaths, 1893.		Deaths, 1894.		Deaths, 1895.	
	No.	Per 1,000 of Population.	No.	Per 1,000 of Population.	No.	Per 1,000 of Population.
Auckland ..	404	12·90	484	15·41	471	14·87
Wellington ..	462	13·43	414	11·82	462	13·07
Christchurch ..	219	12·80	185	10·55	191	10·83
Dunedin ..	289	12·26	271	11·38	244	10·21

Here the rate at Auckland shows a decrease as compared with the previous year, but an increase as compared with 1893. The rates at Wellington and Christchurch are higher than in 1894, but lower than in 1893; while the Dunedin rate is seen to have fallen in 1894, and to have still further declined last year.

Omitting the deaths of infants under one year, and calculating the rate on the population of one year of age and upwards, Dunedin takes precedence of Christchurch.

	Deaths per 1,000 of Population, excluding Infants (under One Year of Age).		
	1893.	1894.	1895.
Auckland (excluding suburbs)	9·66	11·53	11·02
Wellington „ ..	10·26	9·40	9·84
Christchurch „ ..	9·24	8·69	8·70
Dunedin „ ..	10·18	9·66	9·67

Subjoined is a table showing the rates of infant mortality in the four cities for each of the past five years, together with the mean rates for the period. In respect of both last year's rate and the mean rate, Auckland stands first and Dunedin fourth. For 1895 Wellington has a higher rate than Christchurch, but the mean rate at Christchurch is the greater of the two.

	Deaths of Children under One Year to every 100 Births.					
	1891.	1892.	1893.	1894.	1895.	Mean of Five Years.
Auckland (excluding suburbs) ..	13·36	14·28	12·64	15·12	14·86	14·05
Wellington " ..	12·14	11·50	12·26	9·49	12·40	11·56
Christchurch " ..	12·71	16·81	18·60	9·00	11·14	13·65
Dunedin " ..	9·87	9·51	11·16	8·73	9·47	9·75

A comparison of the death-rates of the chief towns of New Zealand for 1895 with those of Australian capitals shows the rates in this colony to be generally lower:—

Principal Cities.	Deaths per 1,000 of Population. 1895.	Principal Cities.	Deaths per 1,000 of Population. 1895.
Perth (including suburbs) ..	26·05	Brisbane (inc. suburbs), 1894 ..	12·47
Hobart " ..	15·10	Auckland " ..	13·30
Melbourne " ..	15·97	Wellington " ..	12·50
Sydney " ..	13·18	Christchurch " ..	10·54
Adelaide " ..	14·86	Dunedin " ..	9·15

VITAL STATISTICS OF AUSTRALASIAN CAPITALS, 1895.

Chief Cities (including Suburbs).	Mean Population.	Births.		Deaths.		Excess of Births over Deaths.
		Total Number.	Rate per 1,000 of Population.	Total Number.	Rate per 1,000 of Population.	
Melbourne	443,255	13,208	29·80	7,077	15·97	6,131
Sydney	416,050	12,761	30·67	5,485	13·18	7,276
Adelaide	143,507	4,456	31·05	2,133	14·86	2,323
Brisbane (1894) ..	94,000	3,261	34·69	1,172	12·47	2,089
Perth	17,618	611	34·68	459	26·05	152
Hobart	36,300	940	25·90	548	15·10	392
Wellington	39,036	1,142	29·26	488	12·50	654

Deaths in the Colony at Various Age-periods.

Of the persons who died in 1895, 357 men and 211 women were at or over 75 years of age. Of these, 188 men and 101 women were under 80 years of age, 93 men and 58 women between 80 and 85, 51 men and 37 women from 85 to under 90, 19 men and 10 women from 90 to 95, 5 men and 5 women between 95 and 100 years. There was, besides, one death of a male stated to have been 102 years of age.

The combined ages of all the males who died amounted to 143,365 years, and of the females to 87,411 years, giving an average age at death of 36·21 years for the males and 30·17 years for the females.

The average age at death of persons of either sex, in each of the past five years, was as follows:—

	Males.	Females.
1890	33·81 years	28·62 years.
1891	33·11 "	29·25 "
1892	32·97 "	28·95 "
1893	31·86 "	27·79 "
1894	36·64 "	31·59 "
1895	36·21 "	30·17 "

It will be observed that the average age fell in 1893, and rose again in 1894 with almost startling suddenness. But on comparing the figures for the two years it is found that in 1893 the measles epidemic carried off 525 persons, of whom 382 were children under 5 years of age. In 1894 there were no more than 14 deaths from measles (8 under 5), and the total number of deaths of children under 5 fell in consequence from 2,371 to 2,003. At the same time the deaths at 50 years and upwards increased from 2,091 to 2,519.

More males than females are born annually, and more male than female infants die in proportion to the number of each sex born. In 1895 the number of male children born was 9,493, and the number of deaths of male infants under one year of age was 893, being at the rate of 94 in every 1,000 born; the number of females born was 9,053, and the number that died under one year of age was 744, being in the proportion of 82 in every 1,000 born.

Subjoined is a classified statement of the deaths of infants under one year during 1895, with the ratio of the deaths in each class to the 1,000 births during the year:—

Year.	Sex.	Under 1 Month.	1 and under 3 Months.	3 and under 6 Months.	6 and under 12 Months.	Total under 12 Months.
	NUMBER OF DEATHS.					
1895 ..	Male	323	172	183	215	893
	Female	252	161	146	185	744
	DEATHS TO THE 1,000 BIRTHS.					
1895 ..	Male	34·02	18·12	19·28	22·65	94·07
	Female	27·84	17·78	16·13	20·43	82·18

It will be seen from these figures that the chances of living during the first year of age are far greater in favour of female than of male infants. Thus, during the year 1895 there were—

100 deaths of males to 78 deaths of females under 1 month of age;
100 " 94 " from 1 to 3 months of age;
100 " 80 " from 3 to 6 months of age;
100 " 86 " from 6 to 12 months of age;
100 " 83 " under 12 months of age.

The rates of infantile mortality—that is, the proportion the deaths of children under one year of age bear to the births—are higher in the Australian Colonies than in New Zealand. The following table gives the rate in the several colonies named for each of the ten years 1883–92:—

NUMBER OF DEATHS OF CHILDREN UNDER ONE YEAR OF AGE TO EVERY 100 BIRTHS.

Year.	Queensland.	New South Wales.	Victoria.	South Australia.	Tasmania.	New Zealand.
1883 ..	13·34	11·48	11·44	14·56	12·39	10·39
1884 ..	14·74	12·62	11·37	13·42	9·98	7·93
1885 ..	14·85	13·12	12·57	11·34	11·26	8·92
1886 ..	12·59	12·85	12·73	12·62	10·48	9·84
1887 ..	11·29	10·59	13·00	11·12	10·09	9·38
1888 ..	12·07	11·09	12·75	9·59	9·43	7·07
1889 ..	13·62	12·50	15·21	9·42	10·64	7·89
1890 ..	10·05	10·45	11·74	9·65	10·55	7·87
1891 ..	10·12	11·89	12·62	9·09	9·45	9·12
1892 ..	10·68	10·60	10·68	9·67	9·91	8·92

Infantile mortality is as a rule greatest in large towns, where the population is dense and the sanitary conditions are less favourable than in country districts. The absence in New Zealand of any such large centres of population as are found in some of the Australian Colonies may partially account for the lower rates of infantile mortality in this colony.

Death-rates of Married Men and Orphanhood of Children.

"The Registration of Births and Deaths Act Amendment Act, 1882," requires that on the registration of the death of any person the age of each living child of the deceased shall be entered in the register. The particulars so recorded for several years have been tabulated, and the detailed results are shown in the two tables on pages 58 and 59 of the "Statistics of New Zealand, 1895." One of those tables deals with the year 1895 only; the other gives the aggregate results for the five years 1891 to 1895 inclusive. They show the total number of men who died at each year of age from 20 to 65, the number of married men (husbands and widowers) stated in the registers to have died childless, the number who died leaving children, and the number and ages of the children so left.

From the first of these tables it is found that during 1895 there died 1,669 men between the ages of 20 and 65, of whom 906 were married; 769 married men left children at their deaths, while 137

are stated to have been childless. The proportions of married men and bachelors in every 100 males dying were 54·28 and 45·72 respectively. The proportions at the census of 1891 for the total number living at the above ages were: Married men, 56·81 per cent.; bachelors, 42·92 per cent.; and unspecified, 0·27 per cent. The difference here shown would seem to prove that the death-rate amongst married men at the ages under review is lighter than amongst bachelors; but it must be borne in mind that when registering a death the informant is not always in possession of full particulars as to the conjugal condition of the deceased, and that therefore the number of married men as shown in the tables may be somewhat short of the actual fact.

Assuming the ratio of married men at 20 to 65 to the total male population at those ages to be the same in 1895 as at the census of 1891, the death-rate among married men is found to be 9·15 per 1,000 living, whereas the rate for all men at the same age-period was in 1895 9·45 per 1,000.

Ages.	1891.			1895.		
	Total Number of Males living at each Age-period.	Total Number of Male Deaths.	Death-rate per 1,000 living.	Estimated Number of Married Men (and Widowers) living.	Number of Deaths of Married Men.	Death-rate per 1,000 living.
20–25 ..	28,337	148	5·22	2,545	2	0·79
25–30 ..	23,704	108	4·56	9,473	40	4·22
30–35 ..	22,021	114	5·18	14,064	41	2·92
35–40 ..	20,513	139	6·78	15,479	83	5·36
40–45 ..	17,755	139	7·83	13,834	97	7·01
45–50 ..	17,028	183	10·75	13,960	125	8·95
50–55 ..	16,770	272	16·22	13,922	152	10·92
55–60 ..	10,945	252	23·02	9,193	179	19·47
60–65 ..	7,685	227	29·54	6,499	187	28·77
	164,758	1,582	9·60	98,969	906	9·15

The death-rate for married men at the same age-period found to obtain in 1894 was 9·68.

The total number of children left by the 906 married men who died in 1895 was 3,822. Of these, 1,633 were under 15 years of age, 814 between 15 and 21, and 1,186 over 21, leaving 189 about whom no information could be obtained. Thus the average number of children of all ages left by each married man dying between 20 and 65 is 4·22, or 1·80 under 15, 0·90 between 15 and 21, 1·31 over 21 years of age, and 0·21 of unspecified age. Discarding the number (137) of fathers said to have died childless, the average number of children left by each of the others is 4·97 of all ages—2·12 under 15, 1·06 between 15 and 21, 1·54 over 21, and 0·25 of unspecified age. Very similar results are obtained

if the figures for the five years 1891–95 be used instead of those for 1895 only.

Ages.	Estimated Number of Husbands and Widowers living in 1895.	Total Number of Male Deaths.	Number of Married Men who died.		Number and Ages of Children left.				
			Childless.	Leaving Children.	Under 15.	15 to 21.	21 and upwards.	Unspecified.	Total.
20–25	2,545	144	..	2	3	..	..	..	3
25–30	9,473	146	9	31	62	..	..	..	62
30–35	14,064	112	10	31	84	..	..	..	84
35–40	15,479	156	15	68	234	21	..	9	264
40–45	13,834	153	14	83	274	47	3	46	370
45–50	13,960	190	14	111	318	139	34	22	513
50–55	13,922	228	19	133	281	208	181	49	719
55–60	9,193	254	34	145	239	211	391	19	860
60–65	6,499	286	22	165	138	188	577	44	947
	98,969	1,669	137	769	1,633	814	1,186	189	3,822

An important fact brought out by the statistics quoted above is that every year upwards of 1,500 children under 15 years of age are left fatherless—how many without adequate means of living it is not possible to say.

Causes of Death.

The deaths registered during the last five years, when distributed among the several classes according to their assigned causes, give the rates shown hereunder:—

Causes of Death.	Rate per 10,000 living.				
	1891.	1892.	1893.	1894.	1895.
Zymotic diseases	17·38	15·67	17·95	14·12	11·24
Parasitic diseases	0·21	0·42	0·36	0·32	0·36
Dietetic diseases	0·98	1·31	1·07	0·63	0·81
Constitutional diseases	16·89	17·61	17·56	19·42	18·95
Developmental diseases	7·43	7·83	7·65	8·04	7·12
Local diseases	47·48	45·16	46·40	45·22	48·60
Violence	8·03	8·24	8·24	10·26	8·62
Ill-defined and not-specified causes ..	5·08	4·34	3·09	3·84	3·42
All causes	103·48	100·58	102·32	101·85	99·12

The following statement gives the number of deaths for 1895 according to the various classes of disease, the proportion of deaths in each class and order to the total number of deaths, and the proportion of deaths in each class and order per 10,000 living in 1895:—

Causes of Death.	Number of Deaths.			Proportion to Total Deaths.			Proportion per 10,000 living, 1895.	Proportion per 10,000 living, 1894.
	Male.	Female.	Total.	Male.	Female.	Total.		
				Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Class I. Specific febrile or zymotic diseases,—								
Order 1. Miasmatic diseases	232	226	458	5·85	7·80	6·68	6·62	9·70
" 2. Diarrhœal diseases	118	114	232	2·98	3·93	3·39	3·35	3·05
" 3. Malarial diseases	2	4	6	0·05	0·14	0·08	0·09	0·06
" 4. Zoogenous diseases	...	...	...	...	...	...	...	0·02
" 5. Venereal diseases	14	10	24	0·35	0·35	0·34	0·34	0·41
" 6. Septic diseases	13	45	58	0·33	1·55	0·85	0·84	0·88
Total Class I.	379	399	778	9·56	13·77	11·34	11·24	14·12
Class II. Parasitic diseases	13	12	25	0·33	0·41	0·36	0·36	0·32
Class III. Dietetic diseases	32	24	56	0·81	0·83	0·82	0·81	0·63
Class IV. Constitutional diseases	689	623	1,312	17·37	21·50	19·12	18·95	19·42
Class V. Developmental diseases	279	214	493	7·03	7·39	7·18	7·12	8·04
Class VI. Local diseases,—								
Order 1. Diseases of nervous system	432	327	759	10·89	11·29	11·06	10·97	9·7
" 2. Diseases of organs of special sense	7	1	8	0·18	0·03	0·11	0·12	0·24
" 3. Diseases of circulatory system	413	240	653	10·41	8·28	9·52	9·43	8·26
" 4. Diseases of respiratory system	565	389	954	14·24	13·43	13·91	13·78	12·63
" 5. Diseases of digestive system	342	254	596	8·62	8·77	8·69	8·61	8·88
" 6. Diseases of lymphatic system	13	10	23	0·33	0·34	0·33	0·33	0·24
" 7. Diseases of urinary system	161	70	231	4·06	2·42	3·37	3·31	3·09
" 8. Diseases of reproductive system,—								
(*a.*) Of organs of generation	...	32	32	...	1·11	0·46	0·46	0·50
(*b.*) Of parturition	...	69	69	...	2·38	1·01	0·99	1·07
" 9. Diseases of locomotive system	9	7	16	0·23	0·24	0·23	0·23	0·34
" 10. Diseases of integumentary system	11	13	24	0·28	0·45	0·34	0·34	0·27
Total Class VI.	1,953	1,412	3,365	49·21	48·74	49·03	48·60	45·22
Class VII. Violence,—								
Order 1. Accident or negligence	398	105	503	10·03	3·63	7·33	7·27	9·09
" 2. Homicide	8	4	12	0·20	0·14	0·17	0·17	0·10
" 3. Suicide	72	9	81	1·82	0·31	1·19	1·17	1·07
" 4. Execution	...	1	1	...	0·03	0·01	0·01	...
Total Class VII.	478	119	597	12·05	4·11	8·70	8·62	10·26
Class VIII. Ill-defined and not-specified causes	143	94	237	3·61	3·25	3·45	3·42	3·84
Grand totals	3,966	2,897	6,863	100·00	100·00	100·00	99·12	101·85

The following table exhibits the number of deaths in 1895 from each specific disease:—

CAUSES OF DEATH.

Class.	Causes of Death. Orders and Diseases.	Males.	Females.	Total.
I.—Specific Febrile or Zymotic Diseases.	Order 1.—*Miasmatic.*			
	Small-pox	...	...	...
	Chicken-pox	...	...	...
	Measles	...	...	...
	Epidemic roso-rash, rubeola	...	...	...
	Scarlet fever, scarlatina	2	4	6
	Typhus	...	1	1
	Dengue	...	...	...
	Relapsing fever	...	...	...
	Influenza	75	50	125
	Whooping-cough ...	67	83	150
	Mumps	...	1	1
	Diphtheria	35	41	76
	Cerebro-spinal fever ...	...	...	...
	Simple and ill-defined fever	3	2	5
	Enteric fever, typhoid ...	50	44	94
	Other miasmatic diseases	...	...	...
	Total Order 1 ...	232	226	458
	Order 2.—*Diarrhœal.*			
	Simple cholera	10	10	20
	Diarrhœa	101	89	190
	Dysentery	7	15	22
	Total Order 2 ...	118	114	232
	Order 3.—*Malarial.*			
	Remittent fever... ...	...	2	2
	Ague	2	2	4
	Beriberi	...	...	...
	Total Order 3 ...	2	4	6
	Order 4.—*Zoogenous.*			
	Hydrophobia	...	...	...
	Glanders	...	...	...
	Splenic fever	...	...	...
	Cow-pox and other effects of vaccination... ...	...	...	...
	Total Order 4 ...	...	...	...
	Order 5.—*Venereal.*			
	Syphilis	10	9	19
	Gonorrhœa, stricture of urethra, ulcer of groin	4	1	5
	Total Order 5 ...	14	10	24
	Order 6.—*Septic.*			
	Phagedæna	...	...	...
	Erysipelas	7	6	13
	Pyæmia, septicæmia ...	6	7	13
	Puerperal fever, pyæmia, septicæmia	...	32	32
	Total Order 6 ...	13	45	58
	Total Class I. ...	379	399	778
II.—Parasitic Diseases.	Thrush	3	4	7
	Other diseases from vegetable parasites ...	...	...	...
	Hydatid disease ...	7	6	13
	Worms	3	2	5
	Other diseases from animal parasites	...	...	...
	Total Class II. ...	13	12	25
III.—Dietetic Diseases.	Starvation	...	...	...
	Want of breast-milk ...	14	16	30
	Scurvy	...	...	...
	Intemperance—			
	Chronic alcoholism ...	17	6	23
	Delirium tremens ...	1	1	2
	Other dietetic diseases ...	...	1	1
	Total Class III. ...	32	24	56
IV.—Constitutional Diseases.	Rheumatic fever ...	25	25	50
	Rheumatism	6	13	19
	Gout	1	1	2
	Rickets	1	1	2
	Cancer	208	175	383
	Tabes mesenterica, tubercular peritonitis ...	27	35	62
	Tubercular meningitis, acute hydrocephalus ...	28	34	62
	Phthisis	295	258	553
	Other forms of tuberculosis, scrofula	51	33	84
	Purpura, hæmorrhagic diathesis	4	3	7
	Anæmia, chlorosis, leucocythæmia	15	14	29
	Diabetes mellitus ...	23	23	46
	Other constitutional diseases	5	8	13
	Total Class IV. ...	689	623	1,312
V.—Developmental Diseases.	Premature birth ...	88	95	183
	Atelectasis	18	8	26
	Cyanosis	17	10	27
	Spina bifida	2	3	5
	Imperforate anus ...	...	1	1
	Cleft palate, hare-lip ...	...	3	3
	Other congenital defects	13	3	16
	Old age	141	91	232
	Total Class V. ...	279	214	493
VI.—Local Diseases	Order 1.—*Diseases of Nervous System.*			
	Inflammation of the brain or its membranes	41	33	74
	Cerebro-spinal meningitis	2	3	5
	Apoplexy	99	86	185
	Softening of brain ...	10	8	18
	Hemiplegia, brain paralysis	16	17	33

CAUSES OF DEATH—*continued.*

Class.	Causes of Death. Orders and Diseases.	Males.	Females.	Total.
VI.—LOCAL DISEASES—*continued.*	ORDER 1.—*Diseases of Nervous System*—contd.			
	Paralysis (undescribed)...	37	25	62
	Paralysis agitans ...	1	...	1
	Insanity, general paralysis of insane	47	14	61
	Chorea	1	2	3
	Epilepsy	19	21	40
	Convulsions	92	70	162
	Laryngismus stridulus ...	1	2	3
	Idiopathic tetanus ...	6	2	8
	Paraplegia, diseases of spinal cord	16	10	26
	Locomotor ataxia ...	13	2	15
	Other diseases of nervous system	31	32	63
	Total Order 1 ...	432	327	759
	ORDER 2.—*Diseases of Organs of Special Sense.*			
	Otitis, otorrhœa... ...	7	1	8
	Epistaxis, and diseases of nose	...	...	...
	Ophthalmia, and diseases of eye	...	...	...
	Total Order 2 ...	7	1	8
	ORDER 3.—*Diseases of Circulatory System.*			
	Endocarditis, valvular disease	272	144	416
	Pericarditis	1	3	4
	Hypertrophy of heart ...	1	...	1
	Fatty degeneration of heart	30	24	54
	Angina pectoris... ...	6	3	9
	Syncope	54	47	101
	Aneurism	24	5	29
	Senile gangrene... ...	5	4	9
	Embolism, thrombosis...	9	6	15
	Phlebitis	2	...	2
	Varicose veins, piles ...	...	...	...
	Other diseases of circulatory system	9	4	13
	Total Order 3 ...	413	240	653
	ORDER 4.—*Diseases of Respiratory System.*			
	Laryngitis	11	11	22
	Croup	29	16	45
	Other diseases of larynx and trachea	...	2	2
	Asthma, emphysema ...	18	7	25
	Bronchitis	205	160	365
	Pneumonia	230	141	371
	Pleurisy...	29	16	45
	Other diseases of respiratory system	43	36	79
	Total Order 4 ...	565	389	954

Class.	Causes of Death. Orders and Diseases.	Males.	Females.	Total.
VI.—LOCAL DISEASES—*continued.*	ORDER 5.—*Diseases of Digestive System.*			
	Stomatitis, cancrum oris	3	3	6
	Dentition	34	32	66
	Sore throat, quinsy ...	10	10	20
	Dyspepsia	7	4	11
	Hæmatemesis	...	2	2
	Melæna	...	2	2
	Diseases of stomach, gastritis	36	39	75
	Enteritis	78	63	141
	Ulceration, perforation, of intestine	10	2	12
	Ileus, obstruction of intestine	19	13	32
	Stricture or strangulation of intestine	1	2	
	Intussusception of intestine	6	2	8
	Hernia	10	6	16
	Fistula	...	1	1
	Peritonitis	32	31	63
	Ascites	...	2	2
	Gall-stones	5	3	8
	Cirrhosis of liver ...	39	6	45
	Other diseases of liver, hepatitis, jaundice ...	47	26	73
	Other diseases of digestive system	5	5	10
	Total Order 5 ...	342	254	596
	ORDER 6.—*Diseases of Lymphatic System and Ductless Glands.*			
	Diseases of lymphatic system	2	2	4
	Diseases of spleen ...	1	...	1
	Bronchocele	4	5	9
	Addison's disease ...	6	3	9
	Total Order 6 ...	13	10	23
	ORDER 7.—*Diseases of Urinary System.*			
	Acute nephritis	16	12	28
	Bright's disease ...	74	44	118
	Uræmia	14	2	16
	Suppression of urine ...	2	...	2
	Calculus	4	2	6
	Hæmaturia	2	...	2
	Diseases of bladder and prostate	38	2	40
	Other diseases of urinary system (kidney diseases undescribed)	11	8	19
	Total Order 7 ...	161	70	231
	ORDER 8.—*Diseases of Reproductive System.*			
	(*a.*) Diseases of organs of generation,—			
	Ovarian disease ...	...	10	10

CAUSES OF DEATH—*continued.*

Class.	Causes of Death. Orders and Diseases.	Males.	Females.	Total.
VI.—LOCAL DISEASES—*continued.*	ORDER 8.—*Diseases of Reproductive System*—ctd.			
	(*a.*) Diseases of organs of generation—*ctd.*			
	Diseases of uterus and vagina	...	18	18
	Disorders of menstruation	...	2	2
	Pelvic abscess	...	2	2
	Perineal abscess ...	...	...	...
	Diseases of testes, penis, scrotum, &c.	...	...	...
	(*b.*) Diseases of parturition,—			
	Abortion, miscarriage ...	...	6	6
	Puerperal mania ...	...	3	3
	Puerperal metritis ...	...	...	...
	Puerperal convulsions ...	...	14	14
	Placenta prævia (flooding)	...	18	18
	Phlegmasia dolens ...	...	2	2
	Other accidents of childbirth	...	26	26
	Total Order 8 ...	...	101	101
	ORDER 9.—*Diseases of Organs of Locomotion.*			
	Caries, necrosis	2	1	3
	Arthritis, ostitis ...	2	3	5
	Other diseases of organs of locomotion	5	3	8
	Total Order 9 ...	9	7	16
	ORDER 10.—*Diseases of Integumentary System.*			
	Carbuncle	3	3	5
	Phlegmon, cellulitis ...	2	1	3
	Lupus	1	1	2
	Ulcer, bed-sore	2	1	3
	Eczema	...	6	6
	Pemphigus	1	2	3
	Other diseases of integumentary system ...	2	...	2
	Total Order 10 ...	11	13	24
	Total Class VI. ...	1,953	1,412	3,365
VII.—VIOLENCE.	ORDER 1.—*Accident or Negligence.*			
	Fractures, contusions ...	153	18	171
	Gunshot wounds ...	25	1	26
	Cut, stab	5	2	7
	Burn, scald	24	19	43
	Sunstroke	3	1	4
	Poison	11	5	16
	Drowning	135	31	166
	Suffocation	13	11	24
	Otherwise	29	17	46
	Total Order 1 ...	398	105	503
	ORDER 2.—*Homicide.*			
	Murder, manslaughter ...	8	4	12
	Wounds in battle ...	...	...	...
	Total Order 2 ...	8	4	12
	ORDER 3.—*Suicide.*			
	Gunshot wounds ...	16	...	16
	Cut, stab	7	1	8
	Poison	15	3	18
	Drowning	9	4	13
	Hanging	23	1	24
	Otherwise	2	...	2
	Total Order 3 ...	72	9	81
	ORDER 4.—*Execution.*			
	Hanging	...	1	1
	Total Class VII. ...	478	119	597
VIII.—ILL-DEFINED AND NOT-SPECIFIED CAUSES.	Dropsy	1	1	2
	Marasmus, &c.	130	93	223
	Mortification, gangrene ...	...	...	...
	Tumour	...	...	...
	Abscess	1	...	1
	Hæmorrhage	...	...	...
	Sudden (cause unascertained)	...	...	...
	Other ill-defined and not-specified causes ...	11	...	11
	Total Class VIII. ...	143	94	237
	General totals ...	3,966	2,897	6,863

The deaths in 1895 from specific febrile or zymotic diseases amounted to 778, a proportion of 112 in every 100,000 persons living, and a decrease of 181 on the number of deaths in 1894 from the same causes.

The following are the diseases in this class that have caused the greatest mortality during the past ten years:—

Diseases.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Measles	49	28	5	2	1	1	..	525*	14	..
Scarlet fever and scarlatina	7	18	21	19	31	24	4	1	5	6
Diphtheria ..	78	92	143	113	116	86	195	128	92	76
Whooping-cough ..	132	138	72	19	82	242	115	55	190	150
Influenza ..	11	9	9	9	70	210	144	106	233	125
Diarrhœal diseases	455	475	214	355	290	319	329	193	207	232
Enteric or typhoid fever	123	158	130	118	145	119	134	97	115	94
Puerperal fever ..	33	24	39	25	19	27	29	24	38	32

From smallpox there were no deaths. The total vaccinations registered fell from 9,322 to 8,523, and the proportion of successful vaccinations of children under fourteen years of age to the total of births, from 50·31 to 44·34. The number of children under one year of age successfully vaccinated, and the proportion to the total number of births, are given for 1895 and the eight preceding years:—

Provincial Districts.	Total Vaccinations registered.	Number of Births registered.	Proportion of Successful Vaccinations of Children under 1 Year of Age to Total Births. Per Cent.	Proportion of Successful Vaccinations of Children under 14 Years of Age to Total Births. Per Cent.
Auckland	1,333	3,948	25·66	33·76
Taranaki	376	929	22·39	40·47
Hawke's Bay ..	473	1,092	26·65	43·32
Wellington ..	845	3,563	18·78	23·72
Marlborough ..	30	370	2·70	8·11
Nelson	459	888	25·11	51·69
Westland	..	281	..	..
Canterbury ..	2,100	3,419	52·79	61·42
Otago	2,907	4,053	41·03	71·72
Chatham Islands ..	..	3	..	..
Totals, 1895 ..	8,523	18,546	31·72	44·34
Totals, 1894 ..	9,322	18,528	32·42	50·31
„ 1893 ..	7,412	18,187	28·09	40·75
„ 1892 ..	8,216	17,876	32·41	45·96
„ 1891 ..	9,284	18,273	38·81	50·81
„ 1890 ..	9,357	18,278	42·66	51·19
„ 1889 ..	11,913	18,457	48·37	64·55
„ 1888 ..	12,782	18,902	51·10	67·62
„ 1887 ..	12,919	19,135	53·79	67·52

The figures for last year show badly when compared with those for the previous year, 1894, and are in themselves unsatisfactory, for they go to prove that only one child in every three born is successfully vaccinated, which is a serious matter enough when

* Including rubeola (14).

the possibility of an epidemic of smallpox is taken into consideration.

In England, after three years practical immunity from smallpox, the deaths rose in 1892 to 431, or 15 per million persons living. In 1893 there was a further rise to 1,457, or a rate of 49 per million living; but in 1894 the rate fell to 820, or 27 per million. The Registrar-General remarks that "of the 820 persons whose deaths were recorded in 1894 only 153, or 19 per cent., were described as having been vaccinated; 176, or 21 per cent., were returned as not vaccinated; and with respect to the remaining 60 per cent. no statement as to vaccination appeared in the certificates. In addition to the above, 108 deaths were attributed to chicken-pox, and 50 deaths to 'effects of vaccination.' Thus, in the year 1894 the total number of deaths either certainly or possibly caused by variola, and of deaths alleged to have been caused by the means taken to prevent that disease, was 978, or 33 per million persons living." A system, described as "moderate compulsion," has been recommended in England, under which persons who had been fined £1, or had been fined in two penalties of any amount, for neglecting to have their children vaccinated would be exempted from any further proceedings.

Measles, which was epidemic in 1893, caused only 14 deaths in 1894, and none in 1895. The mortality from diphtheria, whooping-cough, and influenza fell during 1895, but from diarrhœal diseases the deaths increased from 207 to 232. The deaths from influenza, though only 125 against 233 in 1894, show this disease to be contributing largely to the mortality, and for six years the deaths number 888 altogether. Deaths from typhoid fever decreased from 115 in 1894 to 94 in 1895, the rate for the last year being 1·36 per 10,000 persons living against 1·69 in the previous year.

The following table showing the proportions for the several Australasian Colonies for the years 1887–92 is taken from the Victorian Year-book:—

DEATHS FROM TYPHOID FEVER, 1887-92, PER 10,000 PERSONS LIVING.

	1887.	1888.	1889.	1890.	1891.	1892.
Queensland ..	7·07	6·31	10·28	3·40	3·11	3·05
New South Wales ..	4·32	4·26	5·35	2·82	2·35	2·81
Victoria ..	6·21	5·13	8·35	5·46	3·10	2·59
South Australia ..	4·92	3·84	4·37	3·13	2·52	2·70
Western Australia ..	3·12	1·65	1·16	0·42	2·34	9·83
Tasmania ..	8·37	6·12	8·06	3·41	5·57	3·01
New Zealand ..	2·82	2·30	1·98	2·40	1·89	2·20

There were 25 deaths from parasitic diseases, the proportion per 10,000 living being 0·36. Seven men and six women died from hydatids.

The deaths from constitutional diseases in 1895 numbered 1,312, or 18·95 per 10,000 of population. The most fatal diseases in this class were phthisis and cancer.

From phthisis there are more deaths than from any other cause. The number of deaths was 553 in 1895—295 males and 258 females—against 576—315 males and 261 females—in 1894. The deaths in 1895 were in the proportion of 7·99 in every 10,000 persons living. The rate among males was higher—8·04 per 10,000 persons living—than among females, 7·92 per 10,000.

The death-rate from phthisis in New Zealand is the lowest for the Australasian Colonies, as will be seen from the figures quoted below:—

DEATH-RATES FROM PHTHISIS PER 10,000 PERSONS LIVING.

	1890.	1891.	1892.
Queensland	13·35	12·38	10·17
New South Wales ..	9·34	9·21	8·62
Victoria	14·58	12·93	13·60
South Australia ..	9·29	10·36	9·41
Western Australia ..	8·97	9·56	8·40
Tasmania	9·60	9·00	8·44
New Zealand ..	8·38	7·86	8·16

In all the Australasian Colonies the rate is materially increased by the deaths of persons who have come out either already suffering from phthisis or predisposed thereto. There is no reason for believing that this circumstance has more effect on the death-rate in Australia than in New Zealand; so that the lower rate obtaining in this colony may be taken as proof of the superiority of its climate for withstanding consumptive tendencies.

The death-rate of England and Wales from phthisis is far higher than that of New Zealand. In 1894 it stood at 13·85 per 10,000. The Registrar-General of England remarks in his report that "up to the year 1888 the mortality from phthisis had shown a steady decline for many years, but in 1889, 1890, and 1891 it rose somewhat. In 1892 and 1893, however, the rate fell again to 1,468 in a million, and again in 1894 to 1,385 per million, which is the lowest rate on record."

Phthisis is now known to be and is treated as an infectious preventible disease caused by the bacillus tuberculosis, which is communicable in many ways. Certain constitutions are far more predisposed than others to receive this bacillus, especially under conditions of life unfavourable to robust health, when a nidus is formed for the development of the bacillus.

Legislative action has been recommended to safeguard the life and health of the people from tubercle, and the complete isolation of consumptive patients, with the disinfecting of their sputa, and of everything that has been in contact with them, is suggested from time to time as a necessary measure.

A table is given, as in previous years, to show the ages, with the length of residence in the colony, of persons who died from phthisis in 1895:—

DEATHS FROM PHTHISIS, 1895.

Length of Residence in the Colony.	Age at Death.											
	Under 5 Years.	5 to 10.	10 to 15.	15 to 25.	25 to 35.	35 to 45.	45 to 55.	55 to 65.	65 to 75.	75 and upwards.	Not specified.	Total.
MALES.												
Under 1 month ..	..	..	..	..	..	..	..	..	..	..	..	..
1 to 6 months ..	..	..	..	2	3	1	..	..	..	..	..	6
6 to 12 months ..	..	..	..	2	2	2	1	..	..	..	..	7
1 to 2 years ..	..	..	..	1	1	..	..	..	..	..	..	2
2 to 3 years ..	..	..	..	1	2	..	1	..	..	..	..	4
3 to 4 years ..	..	..	..	..	1	2	1	1	..	..	..	5
4 to 5 years ..	..	..	..	..	..	1	..	..	..	..	..	1
5 to 10 years ..	..	..	..	..	2	..	1	..	..	..	..	3
10 to 15 years ..	..	..	..	2	9	6	3	1	..	..	..	21
15 to 20 years ..	..	..	..	4	6	7	8	3	1	..	..	29
20 to 25 years ..	..	..	..	3	4	6	10	3	..	..	..	26
25 years and upwards	..	..	..	..	4	7	9	19	8	..	..	47
Not known ..	..	..	..	2	7	8	5	4	3	1	1	31
Born in colony ..	5	3	5	46	44	6	4	..	..	..	..	113
Totals ..	5	3	5	63	85	46	43	31	12	1	1	295
FEMALES.												
Under 1 month ..	..	..	..	..	..	..	..	..	..	..	..	..
1 to 6 months ..	..	..	..	2	..	..	..	..	..	..	..	2
6 to 12 months ..	..	..	..	..	..	..	..	..	..	..	..	..
1 to 2 years ..	..	..	..	1	..	..	..	..	..	..	..	1
2 to 3 years ..	..	..	1	1	1	..	..	..	..	..	..	3
3 to 4 years ..	..	..	..	..	..	..	..	..	..	..	..	..
4 to 5 years ..	..	..	..	..	..	..	..	..	..	..	..	..
5 to 10 years ..	..	..	..	3	2	2	1	..	..	..	..	8
10 to 15 years ..	..	..	..	3	6	8	1	..	..	..	..	18
15 to 20 years ..	..	..	..	3	3	11	1	4	1	1	..	24
20 to 25 years ..	..	..	..	4	8	4	2	1	2	..	..	21
25 years and upwards	..	..	..	..	6	8	10	9	1	1	..	35
Not known ..	..	..	..	..	..	2	..	..	..	..	..	2
Born in colony ..	..	3	8	81	39	10	2	1	..	..	..	144
Totals ..	..	3	9	98	65	45	17	15	4	2	..	258
Totals of both sexes ..	5	6	14	161	150	91	60	46	16	3	1	553

From other forms of tuberculosis the deaths in 1895 were 208, or 3·00 per 10,000 of population.

Cancer was returned as the cause of 383 deaths in 1895, showing a decrease of 25 on the number for the previous year. In 1894 the deaths stated were 408; in 1893, 332; in 1892, 307; in 1891, 295; in 1890, the same number; and in 1889, 260. The death-rates for England and New Zealand, given below, would lead to the belief that there has been of late years a most serious increase in mortality from this cause.

DEATHS FROM CANCER IN EVERY 10,000 PERSONS LIVING.

Year.	New Zealand.	England.
1881	2·69	5·20
1882	2·89	5·34
1883	2·99	5·49
1884	3·46	5·63
1885	3·13	5·72
1886	3·68	5·90
1887	3·99	6·15
1888	4·34	6·21
1889	4·25	6·56
1890	4·75	6·76
1891	4·68	6·92
1892	4·78	6·90
1893	5·02	7·11
1894	6·01	7·13
1895	5·53	..

It has been held, however, that the apparent increase in cancer is the result of more careful definition of the causes of death, and of improved diagnosis. To this the Registrar-General of England replies: "In the face of the constant and great growth of mortality under the head of cancer, and the expressed belief of medical practitioners especially engaged in dealing with this class of diseases that they are becoming more and more common, it seems scarcely possible to maintain the optimistic view that the whole of the apparent increase can be thus explained; and it must be admitted as at any rate highly probable that a real increase is taking place in the frequency of these malignant affections." But a careful investigation made by Mr. George King (Honorary Secretary, Institute of Actuaries), and Dr. Nensholme leads to conclusions differing from the above, and it is now, on the contrary, argued that there has been no increase of cancer whatever, as will be seen by the following extract from the "Proceedings of the Royal Society, London":—

The statistics for Frankfort-on-the-Main enable us to classify cancer in accordance with the part of the body primarily affected. We have therefore classified the returns into two groups, according as the cancer is "accessible" or easy of diagnosis, and "inaccessible" or difficult of diagnosis. The results of this classification show that in those parts of the body in which cancer is easily accessible and detected there has been no increase in cancer mortality between 1860 and 1889. It is true that the majority of the deaths from "accessible" cancer are among women—the deaths from "accessible" cancer among men at Frankfort-on-the-Main being too few to be, when considered alone, trustworthy; but we know of no reason for supposing that, while female cancer of "accessible" parts has remained stationary, male and female cancer of the other parts of the body has really increased.

The general conclusions arrived at are these:—

1. Males and females suffer equally from cancer in those parts of the body common to man and woman, the greater prevalence of cancer among females being due entirely to cancer of the sexual organs.

2. The apparent increase in cancer is confined to what we have called inaccessible cancer. This is shown (*a*) by the Frankfort figures, (*b*) by the fact that the difference between the rates for males and females respectively is approximately constant, and does not progressively increase with the apparent

increase in cancer in each of the sexes, and (c) because the apparent increase in cancer among the well-to-do assured lives, who are presumably attended by medical men of more than average skill, is not so great as among the general population.

3. The supposed increase in cancer is only apparent, and is due to improvement in diagnosis and more careful certification of the causes of death. This is shown by the fact that the whole of the increase has taken place in inaccessible cancer difficult of diagnosis, while accessible cancer easily diagnosed has remained practically stationary.

The following table gives the death-rates from cancer in New Zealand of males and females for the past twelve years:—

DEATHS FROM CANCER IN EVERY 10,000 PERSONS OF EACH SEX LIVING IN NEW ZEALAND.

Year.	Males.	Females.	Year.	Males.	Females.
1884	3·26	3·69	1890	4·72	4·79
1885	2·82	3·43	1891	4·61	4·77
1886	3·69	3·67	1892	5·08	4·44
1887	3·96	4·03	1893	5·35	4·65
1888	4·19	4·53	1894	6·65	5·27
1889	3·47	4·06	1895	5·67	5·37

Deaths from diabetes mellitus were more numerous in 1895 than in any previous year, except in 1894, when the number reached 49. In 1887, when the European population of the colony was 596,374 persons, the deaths were only 17, but in 1895 the total was 46, with a population of 692,417. The death rates were, for 1887, 29 out of every million persons living, and 66 per million for 1895.

The total of deaths from developmental diseases was 493, or 7·12 per 10,000 persons living. The mortality from premature birth comprised 183 deaths. Below is given the proportion for the last five years of deaths from this cause to the total births in the colony. Deaths from congenital defects were 78, and the proportion of these to the total births is also given below. It will be noticed that both proportions show an increase during the period.

NUMBER AND PROPORTIONS PER 1,000 BIRTHS.

Year.	Deaths by Premature Birth.		Deaths by Congenital Defects.	
	No.	Proportion per 1,000.	No.	Proportion per 1,000.
1891	188	10·29	51	2·79
1892	201	11·24	57	3·19
1893	228	12·54	69	3·79
1894	214	11·55	74	3·99
1895	183	9·87	78	4·21

Or, stating the result in another way, there was one death from premature birth to every 89 births in 1890, and one to 101 in 1895. Similarly the deaths by congenital defects show one to every 345 births in 1890, and one in 238 in 1895. In England the proportion of deaths by premature birth to every 1,000 births was as high as 17·79 in the year 1894.

Deaths from old age in 1895 numbered 232, against 258 in 1894.

Deaths by diseases of the nervous system (759) were 11·06 per cent. of the total mortality last year, and 10·97 per 10,000 of persons

living. Of the 759 deaths, 185 were credited to apoplexy, 162 to convulsions, and 74 to inflammation of the brain and its membranes. A comparison of the deaths from nervous diseases (excluding convulsions of children) for the last five years does not give any reason for supposing that these complaints are on the increase.

Year.	Deaths from Nervous Diseases (excluding Convulsions of Children.) No.	Proportion per 10,000 Persons living.
1891	526	8·35
1892	556	8·66
1893	601	9·09
1894	524	7·72
1895	597	8·62

Deaths from Bright's disease of the kidneys (albuminuria) numbered 118 in the year 1895. In the year 1891, with a smaller population, the mortality was 102 deaths; but for the years 1885–86–87 the deaths were only 53, 57, and 46 respectively. The proportions per million of population were: 1885, 92; 1886, 98; 1887, 77; 1891, 162; 1894, 137; 1895, 170.

Deaths by violence form a very large item in the total mortality. In 1895 the proportion per 10,000 of males living was 13·03, and the proportion in the same number of females 3·65. In other words, one out of every 767 males living, and one out of every 2,737 females, met with a violent death.

Of 478 males who died violent deaths, 72, or 15·06 per cent., were suicides. The deaths of females by violence were far fewer, amounting to no more than 119, and out of these only 9 committed suicide, a proportion of 7·56 per cent. The table on page 117 gives the full list of deaths from external or violent causes for the year 1895.

Accidental deaths numbered 503—males 398 and females 105. Of the total male deaths, 153 resulted from fractures or contusions, and 135 from drowning. Of the female deaths, 31 were due to drowning.

The accidental deaths in 1894 were 479 males and 138 females; and suicides, 59 males and 14 females.

The following figures, taken from the Victorian Year-book of 1894, show the death-rate from violence in the Australasian Colonies and the United Kingdom, from which it would appear that the rate in New Zealand is higher than in the Home-country, South Australia, Victoria, and Tasmania, but lower than in New South Wales, Queensland, and Western Australia:—

Colonies or Countries.	Proportion per 100,000 living of Deaths by Violence.
Queensland	163·8
Western Australia	161·7
New South Wales	111·7
New Zealand	95·7
Victoria	94·6
United Kingdom	77·5
Tasmania	74·5
South Australia	74·2

Deaf-and-dumb.

The number of deaf-and-dumb of both sexes returned at the census of 1891 was 166, the males being 93 and females 73. Included amongst these are 26 persons described as "dumb" only. Out of a total number of 166, 134 were under 30 years of age.

It would appear that the proportion of the deaf-and-dumb in the colony is increasing with time, but not to any very great degree. The figures are given for five census periods:—

Deaf-and-dumb.—Proportions per 10,000 of Population.

	Persons.	Males.	Females.
Census 1874	1·90	2·05	1·71
„ 1878	2·22	2·25	2·18
„ 1881	2·33	2·23	2·45
„ 1886	2·30	2·37	2·22
„ 1891	2·65	2·80	2·49

The number of deaf-and-dumb under 15 years of age was 75. Of these, 50 were at the end of 1891 inmates of the Deaf-and-dumb Institution at Sumner. (See Report of the Hon. the Minister for Education, 1892.)

The number of the population of the colony under 15 years of age was 250,368 at the census of 1891, so that, with a total number of 75 deaf-mutes at that period of life, there was 1 deaf-mute in every 3,338 children. The proportion of deaf-mutes of all ages to the total population of the colony was 1 in every 3,775 persons.

The proportion of deaf-mutes to the total population at the census of 1891 for each of the Australasian Colonies was—

South Australia ..	1 deaf-mute to every	1,369	persons.
Queensland	„ „	2,557	„
Tasmania	„ „	2,716	„
New South Wales ..	„ „	2,867	„
Victoria	„ „	3,133	„
New Zealand	„ „	3,775	„
Western Australia ..	„ „	4,526	„

Blind.

In the 1891 census 274 persons were returned as "blind" or "nearly blind." Of these, 164 were males and 110 females. The results of five censuses are compared in the following table, which shows a steady rise in the numbers of the blind considered in proportion to population, and also that in New Zealand blindness is somewhat more prevalent among males than amongst females:—

Proportions of Blind to every 10,000 of the Population.

	Persons.	Males.	Females.
Census 1874	2·34	2·45	2·18
„ 1878	2·56	2·42	2·73
„ 1881	2·82	2·93	2·68
„ 1886	3·22	3·65	2·70
„ 1891	4·37	4·91	3·74

The proportion of the blind per 10,000 persons living is—for England, about 8·79; for Ireland, 11·30; for Scotland, 6·95; for

Germany, 7·93; for France, 8·37; and for Italy, 7·63. For the Australian Colonies the figures are: Victoria, 8·72; New South Wales, 6·59; Australian Continent, 7·38.

The greater prevalence of blindness in Australia than in New Zealand is best seen by the following comparison for 1891 :—

Tasmania	1 blind person to every	889	persons.
Western Australia ..	" "	922	"
Victoria	" "	1,146	"
South Australia ..	" "	1,297	"
New South Wales ..	" "	1,517	"
Queensland	" "	1,978	"
New Zealand	" "	2,287	"

The occupations for 1891 are as follow :—

Occupations (Past and Present) of the Blind.

	Persons.	M. Under 20.	M. Over 20.	F. Under 20.	F. Over 20.
Justice of the Peace	1	..	1	..	..
Monthly nurse ..	1	..	..	..	1
School-teacher ..	2	..	1	..	1
Instructor to the blind ..	1	..	1	..	..
Photographer ..	1	..	1	..	..
Music-teacher ..	2	..	2	..	..
Boarding-house keeper ..	1	..	1	..	..
Housekeeper ..	1	..	..	..	1
Capitalist ..	3	..	2	..	1
Proprietor of land	1	..	1	..	..
News vendor ..	1	..	1	..	..
Bootlaces and match vendor	1	..	1	..	..
Draper ..	1	..	1	..	..
Butcher ..	1	..	1	..	..
Greengrocer ..	1	..	1	..	..
Grocer ..	1	..	1	..	..
Labourer in coal-yard ..	1	..	1	..	..
Storekeeper ..	2	..	2	..	..
General dealer ..	2	..	2	..	..
Hawker ..	1	..	1	..	..
Commission agent	1	..	1	..	..
Clerk ..	1	..	1	..	.
Assisting carrier	1	1	..	..	..
Piano-tuner ..	1	..	1	..	..
Basket-maker ..	3	..	3	..	..
Coach-painter ..	1	..	1	..	..
Boatbuilder ..	1	..	1	..	..
Chair-mender ..	1	..	1	..	..
Boot- and shoe-maker ..	1	..	1	..	..
Baker ..	1	..	1	..	..
Brewer ..	1	..	1	..	..
Cordial-maker ..	1	..	1	..	..
Sawyer ..	1	..	1	..	..
Brickmaker ..	1	..	1	..	..
Tinsmith ..	1	1	..	..	..
Blacksmith ..	1	..	1	..	..
Moulder ..	1	..	1	..	..
Carpenter ..	4	..	4	..	..
Labourer on roads	1	..	1	..	..
Engineer ..	1	..	1	..	..
Labourer (undefined) ..	13	..	13	..	..
Farmer ..	11	..	11	..	..
Relative assisting farmer ..	1	..	1	..	..
Farm labourer ..	2	..	2	..	..
Gardener ..	1	..	1	..	..
Dairy-farmer ..	1	..	1	..	..
Gold-miner ..	2	..	2	..	..
Quarryman ..	1	..	1	..	..
Gum-digger ..	1	..	1	..	..
Pensioner ..	3	..	3	..	..
Annuitant ..	2	..	1	..	1
Independent means and retired ..	11	..	4	..	7
Not stated, and no occupation ..	87	6	35	7	39
Domestic duties	41	..	..	2	39
Governmt. scholar	1	1	..	..	..
Receiving tuition at home ..	3	2	..	1	..
Dependent relatives ..	8	3	..	5	..
Inmate of hospital	3	..	2	..	1
Inmate of benevolent asylum ..	29	..	25	..	4
Inmate of industrial school ..	1	1	..	..	..
Receiving charitable aid ..	1	..	1	..	..
Totals ..	274	15	149	15	95

Of 274 blind persons, only 66 were found to be under 40 years of age, blindness being a disease more common to the later periods of life.

Blind persons are returned in the census under many heads of occupation, as might be expected, considering the fact just mentioned, that blindness is more common in later life than in youth. No doubt the occupations stated must be looked upon in many instances as past occupations—to which the persons referred to were brought up, and which they followed before they became blind.

LUNACY.

The lunatics returned in the census of 1891 numbered 1,798 of both sexes, 1,088 being men and 710 women.

As in the case of the blind, the census results exhibit continuous increase in the proportion to population, and also show that lunacy is more prevalent amongst men than amongst women.

LUNATICS.—PROPORTIONS PER 10,000 OF POPULATION.

	Persons.	Males.	Females.
Census 1874	19·93	23·28	15·48
„ 1878	20·85	25·07	15·54
„ 1881	22·86	27·30	17·43
„ 1886	26·50	31·03	21·18
„ 1891	27·82	31·28	23·92

The number of lunatics stated in the asylum returns as for the 1st January, 1891, was 1,797, or just one fewer than the number brought out by the census. Although the asylum returns include certain idiots and inebriates not included in the census figures as lunatics, the figures are sufficiently close to show that, saving perhaps one or two here and there, the lunatics of the colony are all cared for in the various institutions set apart for their reception, of which there are seven under Government, and one private asylum licensed by the Governor.

On examining the numbers at the several age-periods, it is found that, taking both sexes, the proportion of lunatics in every 10,000 persons was only 2·61 at 15–20 years, but from that period onwards rose rapidly to 96·67 at 45–50 years, after which it diminished somewhat. The proportion of lunatic females of all ages to the total female population was considerably less than the proportion of males; nevertheless at the period 45–50 years 98·89 per 10,000 women were lunatics, while the highest proportion shown for men is 96·85, at the period 55–60 years.

The number of idiots at the date of the last census was 128. These are not included as lunatics in the census numbers. The proportion of idiots to population was 2·03 per 10,000 of both sexes; for males 2·32, and for females 1·7. At the census of 1886 only 89 persons were returned as idiots.

Insanity, including idiocy, exists in Ireland at the rate of 45·04 insane persons per 10,000 persons living. The rate in Scotland is 38·43; in Victoria, 36·17; in England, 32·53; in New South

Wales, 30·38; in New Zealand, 29·85; in France, 25·1; in Sweden, Norway, and Denmark, 20·59.

Hospitals, Lunatic Asylums, Benevolent Asylums, and Charitable Institutions.

Hospitals.

Prior to the abolition of provinces the hospitals of the colony were supported mainly out of provincial revenues. After that event, the expenditure for hospitals was for the most part charged against the revenue of counties and municipal corporations, until October, 1885, when "The Hospitals and Charitable Institutions Act, 1885," came into force.

The portion of the colony included within the three principal islands—the North, Middle, and Stewart Islands—was by the above Act divided into twenty-eight hospital districts, each consisting of one or more counties with the interior boroughs, to be presided over by elective Boards, designated "Hospital and Charitable-aid Boards."

The revenues of these Boards accrue from the following sources:—

(1.) Rents and profits of land and endowments vested in the Board, or set apart for the benefit of particular institutions;
(2.) Voluntary contributions;
(3.) Grants from contributory local authorities; and
(4.) Subsidies from the Consolidated Fund (these being at the rate of 10s. for every £1 of bequests, but in no case exceeding £500 in respect of any one bequest; £1 4s. for every £1 of voluntary contributions; and £1 for every £1 received from any local authority).

The contributory local authorities (being the County and Borough Councils, and Boards of road and town districts where the Counties Act is not in force) are empowered by the Act to raise by special rates the amounts assessed by the Hospital District Boards as their proportionate contributions to the Hospital and Charitable-aid Fund.

The District Boards undertake the general management and control of those hospitals that are not incorporated in terms of the Act, and are required to contribute to the support of the incorporated hospitals. To be incorporated a hospital must have as many as 100 subscribers, contributing not less than £100 annually by amounts of not less than 5s., and must have been declared by the Governor in Council, after receipt by him of a duly signed petition, to be a body politic and corporate, under the government of trustees.

There are 39 hospitals in the colony, of which 21 are incorporated institutions, while 18 are directly managed and controlled by District Boards. In 1895 these hospitals afforded accommodation

for 1,014 male and 494 female patients, a total of 1,508. The number of cubic feet of space included within the walls of all the sleeping-wards was 2,060,345, which gave an average of 1,366 cubic feet to each bed. 6,050 males and 2,943 females were admitted as patients during the year 1895, and 653 male and 217 female patients were inmates at the end of the year. The total number of indoor patients during the year was 9,827—viz., 6,650 males and 3,177 females.

Outdoor relief was also given to a very large number of persons; but, as in some of the hospitals no records are kept of the outdoor patients, it is impossible to state the number of distinct persons who received such relief.

Benevolent Asylums and Charitable Institutions.

The various benevolent asylums and charitable institutions are placed on a similar footing to the hospitals. Most of the Boards of hospital districts are also Charitable-aid Boards; but, for the purpose of distributing charitable aid only, some of the hospital districts have been united into larger districts, so that, although there are 28 Boards for hospital purposes, there are only 21 for charitable-aid purposes.

Returns were received in 1895 from 16 benevolent asylums (not including orphanages), established for the support of indigent persons. The number of inmates in these institutions at the end of 1895 was 1,016, of whom 636 were males and 380 females. Outdoor relief was given by four of these institutions to 3,776 persons, including 2,158 children.

Auckland Sailors' Home.

There is a Sailors' Home at Auckland for the use of seafaring men resident in or visiting the town. The late Edmund Costley having left a large sum for charitable purposes, it was resolved to employ the bequest in building and endowing an institution where sailors might be received without distinction of race or religious belief, and board, lodging, and refreshments provided for them, together with such instruction and amusements as might tend to promote their social comfort and general welfare.

The Home, built in 1887, has room for 35 inmates, who are charged 15s. a week for board and lodging. It is managed by a council of eight members elected by the subscribers to the institution, with the Anglican Bishop of Auckland (the Right Rev. W. G. Cowie), who first originated the scheme, as life president.

Orphan Asylums.

There were in 1895 five orphan asylums in the colony, one maintained by a District Hospital Board, one by the Church of England authorities, and three by clergy of the Roman Catholic Church; three of them receiving, at the charge of the State, orphan, destitute, and other children committed to them by a Stipendiary Magistrate.

Exclusive of the children so committed, 30 male and 29 female orphans were received during the year 1895, and 63 male and 88 female orphans remained as inmates at the end of the year.

Orphanages receiving committed children are, for that purpose, constituted "industrial schools," and mention of these will be found in the article "State Instruction."

Lunatic Asylums.

There are seven public lunatic asylums in the colony, maintained wholly or in part out of the public revenue. There is also one private asylum, licensed by the Governor for the reception of lunatics. There were, at the end of 1895, 1,206 male and 781 female patients belonging to these asylums. Of these, 1,093 males and 702 females were regarded as incurable, 15 males and 16 females were out on trial, and 98 males and 63 females were supposed to be curable. 253 male and 234 female patients were discharged during the year.

The following shows the proportion of insane—or, rather, of inmates of lunatic asylums—to the population (exclusive in each case of Maoris) at the end of the years stated :—

1884,	1 insane person	to every	393	of population.
1885,	"	"	382	"
1886,	"	"	370	"
1887,	"	"	360	"
1888,	"	"	365	"
1889,	"	"	349	"
1890,	"	"	348	"
1891,	"	"	343	"
1892,	"	"	339	"
1893,	"	"	330	"
1894,	"	"	316	"
1895,	"	"	351	"

It must not be overlooked that the proportions are increased by the admission into the asylums of inebriates, idiots, and others, who should not properly be there.

The Inspector of Hospitals and Asylums, in his report for the year 1895, specifies the causes of insanity in 402 cases (males, 245; females, 157) admitted during the year. In 81 of these (44 males, 37 females) the cause is given as "congenital or hereditary," and in 53 (males, 40; females, 13) as "drink." The proportion of cases due to drink to the total number of specified cases was therefore 13·18 per cent.

Trade and Interchange.

Shipping.

The shipping entered inwards during 1895 comprised 611 vessels, of 672,951 tonnage; while entered outwards were 597 vessels of 648,946 tons. Comparison with the figures for the previous year shows in the entries an increase of 2 vessels and 41,851 tons, and in the clearances a decrease of 17 vessels but an increase of

17,696 tons. Of the vessels inwards, 146, of 299,667 tons, were British; 420, of 319,313 tons, colonial; and 45, of 53,971 tons, foreign. Those outwards numbered 134, of 281,840 tons, British; 420, of 315,171 tons, colonial; and 43, of 51,935 tons, foreign. There was a fall of 3 in the number but a rise of 12,766 in the tonnage of colonial vessels entered, and a rise in the British shipping entered of 5 vessels and 27,673 tons. Of the entries, 275, of 137,667 tons, were sailing-vessels, and 336, of 535,284 tons, steamers. Of the clearances, 268, of 127,777 tons, were sailing-vessels, and 329, of 521,169 tons, steamers. The shipping inwards and outwards for ten years is given in the table following:—

VESSELS ENTERED, 1886–95.

Year.	Total Number.			British.			Colonial.			Foreign.		
	Vessels.	Tons.	Crews.	Vessels.	Tons.	Crews.	Vessels.	Tons.	Crews.	Vessels.	Tons.	Crews.
1886 ..	725	502,572	19,525	116	149,167	4,418	534	294,859	12,660	75	58,546	2,447
1887 ..	653	489,754	19,806	109	144,482	4,202	472	275,085	11,828	72	70,187	3,056
1888 ..	683	526,435	20,783	130	182,020	5,352	497	276,624	12,401	56	67,791	3,030
1889 ..	781	602,634	22,649	158	206,825	5,348	547	319,131	14,162	76	76,678	3,139
1890 ..	744	662,769	23,475	190	280,105	6,786	477	298,497	13,598	77	84,167	3,091
1891 ..	737	618,515	21,889	169	265,164	6,817	507	291,800	12,951	61	61,551	2,121
1892 ..	686	675,223	22,038	203	335,577	8,274	411	265,769	11,303	72	73,877	2,461
1893 ..	617	615,604	20,935	166	290,323	7,289	405	272,250	11,745	46	53,031	1,901
1894 ..	609	631,100	21,834	141	271,994	6,456	423	306,547	13,279	45	52,559	2,099
1895 ..	611	672,951	22,074	146	299,667	6,837	420	319,313	13,209	45	53,971	2,028

VESSELS CLEARED, 1886–95.

1886 ..	707	488,331	19,052	102	134,660	3,870	530	295,469	12,771	75	58,202	2,411
1887 ..	675	493,583	19,155	113	142,890	4,070	494	282,499	12,098	68	68,194	2,987
1888 ..	701	531,478	20,961	109	157,871	4,509	533	305,264	13,396	59	68,343	3,056
1889 ..	762	593,252	22,647	160	211,872	5,714	527	307,083	13,762	75	74,297	3,171
1890 ..	745	649,705	23,260	195	284,635	7,168	477	283,735	13,076	73	81,335	3,016
1891 ..	744	625,807	22,080	168	271,533	7,002	515	291,938	12,947	61	62,336	2,131
1892 ..	689	656,100	21,679	189	315,633	7,934	424	263,504	11,241	76	76,963	2,504
1893 ..	635	642,466	21,448	186	317,130	7,839	400	270,308	11,665	49	55,028	1,944
1894 ..	614	631,250	21,934	140	270,464	6,437	432	310,050	13,527	42	50,736	1,970
1895 ..	597	648,946	21,619	134	281,840	6,528	420	315,171	13,068	43	51,935	2,023

NOTE.—Coasting-vessels are not included in the above table.

The above figures apply to the foreign trade only; but in a new country such as New Zealand, as yet deficient in roads, but having an extensive seaboard and a number of good harbours, the coastal trade must be relatively very large, as is evidenced by the figures next given:—

SHIPPING ENTERED COASTWISE, 1895.

	Number.	Tons.
Sailing-vessels	4,224	248,232
Steamers	13,830	4,606,705

SHIPPING CLEARED COASTWISE, 1895.

	Number.	Tons.
Sailing-vessels	4,254	251,967
Steamers	13,797	4,607,009

The total number of vessels entered coastwise was thus 18,054, of 4,854,937 tons, being an increase of 462 vessels and 252,094 tons on the figures for 1894. The clearances coastwise were 18,051 vessels, of 4,858,976 tons, an increase of 667 vessels and 290,797 tons on the number for the previous year. The number and tonnage of the registered vessels belonging to the several ports on the 31st December, 1895 (distinguishing sailing-vessels and steamers), was as under:—

REGISTERED VESSELS, 31ST DECEMBER, 1895.

Ports.	Sailing-vessels.			Steam-vessels.		
	Vessels.	Gross Tonnage.	Net Tonnage.	Vessels.	Gross Tonnage.	Net Tonnage.
Auckland	169	12,257	11,957	64	8,489	5,438
Napier	7	778	755	12	959	575
Wellington	14	4,622	4,477	22	3,954	2,349
Nelson	18	509	509	11	856	538
Lyttelton	29	5,166	5,049	9	1,336	592
Dunedin	46	11,137	10,984	59	48,342	29,174
Invercargill	16	2,279	2,194	3	304	190
Totals	299	36,748	35,925	180	64,240	38,856

Imports and Exports.

The quantities and values of imports used in making up the figures given in this portion of the statistical report are obtained from Customs entries, verified, where necessary, as with goods subject to an *ad valorem* duty, by examination. For exports, the "free on board in New Zealand" value is given; but, as regards the main items, the Collector of Customs examines carefully the amounts stated, and compares them with current price-lists, to prevent any over-estimate. Goods transhipped at a foreign port are regarded as imported from the country where they were originally shipped, and exports as destined for the country where it is intended to land them. The countries named, however, may not be those of origin or destination, as no attempt is made to trace the goods beyond the ports disclosed by the documents presented to the Customs. Very little cargo *in transitu* passes through New Zealand.

The total declared values of the imports in 1895 amounted to £6,400,129, being a decrease on the corresponding total in 1894 of £387,891. These figures are, however, somewhat misleading, as they include specie. The coin brought into the colony in 1895 was only £284,176 against £797,843 in the previous year, and, if these

items be deducted in either case, the increase on the values of all other articles will be found to reach the sum of £125,776.

The following table gives the value of imports for each of the past eleven years:—

Year.	Imports, inclusive of Specie. £	Imports, exclusive of Specie. £
1885	7,479,921	7,278,101
1886	6,759,013	6,319,223
1887	6,245,515	6,064,281
1888	5,941,900	5,430,050
1889	6,308,863	5,980,583
1890	6,260,505	5,928,625
1891	6,503,849	6,431,101
1892	6,943,056	6,742,544
1893	6,911,515	6,494,279
1894	6,788,020	5,990,177
1895	6,400,129	6,115,953

It will be seen that the value of imports, exclusive of specie, fell by degrees from £7,278,101 in 1885 (the first year of the series) to £5,430,050 in 1888; from the latter year it rose till it reached £6,742,544 in 1892; while in 1893 it again showed a decline—3·68 per cent., in 1894 a further decline of 7·76 per cent., but in 1895 an increase of 2·10 per cent.

Since 1885 the value of New Zealand produce exported has been every year in excess of the value of the imports, and since 1887 (despite the fall in prices of wool, mutton, &c.) very greatly in excess. This being the case, it might have been expected that the rise in the value of imports observable during the five years 1888–92 would be maintained in 1893, 1894, and 1895. The fall in the three latter years is due to a variety of causes, not by any means indicating generally decreased consumption.

Of £6,115,953, total value of goods imported during 1895, the chief items were as under:—

Articles.	Value. £	Proportion per Cent.
Clothing, drapery, &c.	1,622,648	26·53
Metal, machinery, and implements..	781,602	12·78
Tea and sugar	562,952	9·21
Wine, beer, spirits, and tobacco ..	371,794	6·08
Paper and books	290,092	4·74
Other imports	2,486,865	40·66
	6,115,953	100·00

The value of the clothing, drapery, &c., imported increased from £1,559,966 in 1894 to £1,622,648 in 1895. In 1884, with a population smaller by more than 20 per cent., the value of the import was £1,819,674. The iron, machinery, and implements imported in 1895 were valued at £781,602, a decrease of £54,987 on the corresponding figures for 1894 (£836,589). In 1884 the import of these goods was valued at £1,255,981.

The value of sugar (including molasses and treacle) imported in 1894 was larger than in any one of the previous ten years, but this

increase was not maintained in 1895. This import for the last three years has averaged £383,663 per annum, but for the three years 1882, 1883, and 1884 the average, with a much smaller population, was £615,207 for each year. The smaller average amount for the last three years is due, not to a reduction in the quantity imported, but partly to a fall in the price of sugar and partly to the fact that the proportion of refined to raw sugar has vastly decreased.

The import of any article in a given year is seldom identical with the amount consumed in that time. To ascertain the latter we must look to the quantity actually entered at the Customs for home consumption and subjected to duty within the twelve months. Thus, the quantity of sugar, including glucose, molasses, and treacle, entered for consumption in 1895 was 65,782,616lb., which gave an average of 95·0lb. for every person, exclusive of Maoris; but the latter are estimated to consume, on an average, about one-fourth as much as Europeans. If the quantity so used be deducted, the average annual consumption per head of the European population will be slightly reduced (93·59lb.).

The following table, giving the consumption per head of sugar in different countries, is, saving the figures for New Zealand, taken from the Victorian Year-book of 1893. The figures stating the consumption of tea, given further on, are taken from the same source.

ANNUAL CONSUMPTION OF SUGAR PER HEAD IN VARIOUS COUNTRIES.

	Lb.		Lb.
South Australia	102·11	Sweden	17·52
New Zealand	93·59	Belgium	15·74
Western Australia	93·51	Germany	15·01
Victoria	90·75	Austria-Hungary	13·23
Tasmania	90·49	Norway	11·37
United Kingdom	68·99	Finland	11·22
Queensland	62·93	Portugal	9·56
New South Wales	60·95	Roumania	7·71
Argentine Republic	50·04	Russia	7·69
Denmark	29·69	Spain	5·11
Holland	28·37	Servia	4·41
Switzerland	22·81	Italy	3·20
France	22·61		

The quantity of tea entered for consumption in 1895 was 4,472,668lb. Supposing Maoris to use, on an average, 1lb. per head per annum, the consumption of tea per head of the population, exclusive of Maoris, would be 6·40lb. in 1895.

The Australasian Colonies seem to be, in proportion to population, the largest tea-consumers in the world. The amount annually used in New South Wales is estimated to be 7·55lb. per head. The consumption of Victoria has been given by the Government Statist of that colony as 10lb., and of Tasmania as 5·35lb.; the figures for the United Kingdom being 4·7lb., for Canada 3·69lb., and for the United States 1·4lb. The consumption in New Zealand is thus somewhat less than in Victoria or New South Wales, but

greater per head of population than in the other countries mentioned.

ANNUAL CONSUMPTION OF TEA PER HEAD.

	Lb.		Lb.
Western Australia	10·70	Denmark	0·37
Victoria	10·01	Persia	0·13
Queensland	8·96	Portugal	0·12
New South Wales	7·55	Switzerland	0·10
South Australia	7·24	Norway	0·09
New Zealand	6·40	Germany	0·07
Tasmania	5·35	Belgium	0·03
United Kingdom	4·70	Sweden	0·03
Canada	3·69	France	0·03
United States	1·40	Austria-Hungary	0·02
Holland	1·16	Spain	0·01
Russia	0·61		

During 1895 excise duty was paid on 4,936,400 gallons of beer; and 201,770 gallons of beer, 435,431 gallons of spirits, and 93,138 gallons of wine were entered at the Customs for home consumption. The following table gives the consumption per head of alcoholic liquors by the people, excluding and including Maoris, showing separately the proportions of beer, wine, and spirits for the last thirteen years. To the amount of beer manufactured in the colony in each year on which excise duty was paid has been added the amount brought into consumption from imports:—

Year.	Beer.		Spirits.		Wine.	
	Excluding Maoris.	Including Maoris.	Excluding Maoris.	Including Maoris.	Excluding Maoris.	Including Maoris.
	Gal.	Gal.	Gal.	Gal.	Gal.	Gal.
1883	9·435	8·709	1·088	1·005	0·315	0·291
1884	8·769	8·121	0·999	0·923	0·272	0·253
1885	8·414	7·840	0·899	0·825	0·261	0·243
1886	7·861	7·333	0·820	0·765	0·212	0·198
1887	7·651	7·148	0·770	0·719	0·198	0·185
1888	7·133	6·670	0·820	0·767	0·167	0·156
1889	7·624	7·136	0·598	0·560	0·176	0·165
1890	7·899	7·402	0·693	0·649	0·184	0·172
1891	7·646	7·168	0·699	0·655	0·172	0·161
1892	7·807	7·328	0·708	0·664	0·174	0·163
1893	7·716	7·255	0·697	0·656	0·170	0·159
1894	7·391	6·961	0·648	0·611	0·144	0·136
1895	7·421	6·996	0·629	0·593	0·135	0·127

So considerable a reduction in the rate of consumption of these liquors in the last thirteen years should give every encouragement to the advocates of temperance principles in the prosecution of their work. And it is most satisfactory to observe how favourably the above rates of consumption in this colony compare with those of other countries. A comparison can be made by means of the

following statement of the annual consumption of beer and spirits per head in various places:—*

—	Beer.	Spirits.	—	Beer.	Spirits.
	Gal.	Gal.		Gal.	Gal.
United Kingdom ..	28·74	1·00	Tasmania	10·02	0·59
South Australia ..	20·04	0·49	Switzerland ..	8·15	1·04
Germany	19·38	0·95	New Zealand (including Maoris)	7·00	0·59
Victoria	19·36	1·12			
Holland	19·05	2·08	Austria-Hungary ..	6·83	0·63
New South Wales ..	11·94	1·15	France	4·53	0·85
United States ..	10·74	1·34	Canada	3·05	1·19
Queensland	10·23	1·59	Sweden	2·52	4·20

The actual quantity of colonial beer made and used in the colony does not seem to increase in any great degree, as will be seen by the next figures:—

BEER MANUFACTURED IN NEW ZEALAND ON WHICH EXCISE DUTY WAS PAID.

	Gal.		Gal.
1885	4,402,720	1891	4,567,920
1886	4,243,760	1892	4,752,720
1887	4,264,160	1893	4,873,600
1888	4,050,560	1894	4,807,360
1889	4,402,480	1895	4,936,400
1890	4,676,240		

The quantity of tobacco entered for consumption in 1895 was 1,493,235lb., an increase of 121,541lb. on the quantity entered in 1894. This gave a consumption per head of population—including Maoris, who are heavy smokers—of 2·031lb. The average per head for the nine years 1887–95 was 1·971lb.

It appears from the following statement of the consumption of tobacco in different countries that in New Zealand it is, proportionately to population, less than in the chief colonies of Australia, very much less than in the United States, and below the average of most European countries.

AVERAGE ANNUAL CONSUMPTION PER HEAD OF TOBACCO IN VARIOUS COUNTRIES.

	Lb.		Lb.
Holland	6·92	Denmark	2·24
United States	4·40	Canada	2·11
New South Wales	3·53	France	2·05
Queensland	3·49	New Zealand	2·03
Western Australia	3·26	Sweden	1·87
Switzerland	3·24	Tasmania	1·85
Belgium	3·15	Russia	1·82
Germany	3·00	South Australia	1·70
Victoria	2·93	United Kingdom	1·38
Austria-Hungary	2·73	Italy	1·28
Finland	2·73	Spain	1·10
Norway	2·29		

* Taken, except as regards New Zealand, from the Victorian Year-book of 1893.

The imports from the United Kingdom to New Zealand in 1895 were valued at £3,992,359, or an increase of £42,589 on the imports from this source for the previous year. From Australia and Tasmania the imports were £1,261,125, a decrease of £479,840 on the amount in 1894.

The following are the values of imports from different countries in 1894 and 1895, given in the order of the increase or decrease from each country :—

Country.	1894. £	1895. £	Increase. £
United Kingdom	3,949,770	3,992,359	42,589
India and Ceylon	193,381	233,135	39,754
Hongkong and China	26,422	38,664	12,242
Germany	68,163	78,034	9,871
Pacific Islands	52,197	57,773	5,576
Java	85	3,056	2,971
Singapore	8,617	11,457	2,840
Holland	6,072	8,548	2,476
Fiji and Norfolk Island	223,218	224,798	1,580
Italy	2,937	4,094	1,157
Portugal	1,100	2,027	927
West Indies	896	1,819	923
Greece	966	1,706	740
Asia Minor	2,558	3,291	733
Brazil	9	52	43
Cape Colony	16	58	42
Costa Rica	..	42	42
			Decrease.
Australia and Tasmania	1,740,965	1,261,125	479,840
Mauritius	31,431	12,474	18,957
Sweden and Norway	4,435	383	4,052
Philippine Islands	5,450	3,637	1,813
Africa	2,588	1,140	1,448
France	13,898	12,696	1,202
Belgium	17,743	16,862	881
Dominion of Canada	15,367	14,508	859
Switzerland	4,010	3,282	728
Russia	645	..	645
Japan	17,526	16,991	535
Austria	597	131	466
United States	394,691	394,233	458
Arabia	175	..	175
Spain	1,867	1,719	148
Denmark	165	35	130
British Guiana	60	..	60

The imports from India and Ceylon show an increase of £39,754, or 20·56 per cent. on the figures for 1894.

The values of imports in each provincial district during 1895 were as under :—

	£
Auckland	1,620,697
Taranaki	49,325
Hawke's Bay	184,475
Wellington	1,659,463
Marlborough	10,544
Nelson	128,088
Westland	39,105
Canterbury	1,130,775
Otago	1,550,719

The value of imports by parcel-post (£26,938) must be added to the above figures in order to make up the total (including specie) of £6,400,129.

The Customs revenue for the year 1895 amounted to £1,619,970, and the excise duties to £64,068. The revenue from Customs was £2 6s. 9d. per head of population excluding Maoris, and £2 4s. 2d. if they be included. In 1887 the Customs revenue was £2 2s. 11d. per head of European population, and from that time the proportion increased slowly year by year until 1892, when it reached £2 11s. 6d. per head. During the next two years there was a falling-off; but 1895 shows a slight increase on 1894. Details for ten years are given :—

CUSTOMS REVENUE PER HEAD OF POPULATION.

	£	s.	d.		£	s.	d.
1886	2	5	1	1891	2	9	7
1887	2	2	11	1892	2	11	6
1888	2	6	2	1893	2	10	4
1889	2	7	10	1894	2	6	4
1890	2	9	3	1895	2	6	9

In 1895 a new tariff was passed, which has been given in full in this book. The rates of duty levied during the year included 15s. and 16s. per gallon on spirits (perfumed, 21s. and 30s.); 7s. per pound on cigars and snuff; 7s. per pound on cigarettes to 20th September, and from 21st September 17s. 6d. per 1,000 of 2½lb. and under, and 6d. per ounce weight over 2½lb. per 1,000; 3s. 6d. per pound on manufactured and 2s. on unmanufactured tobacco. Sparkling wine was charged 9s. a gallon; Australian, 5s.; other kinds, 6s.; ale and beer, 1s. 6d. to 30th July, and 2s. from 31st July. The duty on tea was 6d., 5d., 4d., and 3d. per pound, but has been fixed at 4d.; on cocoa, chocolate, and chicory, 3d.; raw coffee, 3d. to 30th July, and 2d. from 31st July; roasted, 5d. Sugar, molasses, and treacle paid ½d., and glucose 1d. per pound. Opium was charged 40s. per pound. The remainder of the Customs revenue, with small exception, was made up of charges on goods by weight, *ad valorem* duties ranging from 5 to 40 per cent., and receipts from the foreign parcels post. There was also an excise duty of 1s. per pound on tobacco, 1s. 6d. per pound on cigars and cigarettes, 3d. per gallon on beer, and 9d. per pound on tinctures, &c., manufactured in the colony.

By "The Tobacco Excise Duties Act, 1896," the excise duty on cigarettes, which is at present 1s. 6d. per lb., is altered as on and from the 31st December, 1896, to 2s. 6d. per lb. on machine-made and 1s. per lb. on hand-made cigarettes.

"The Tobacco Act Amendment Act, 1896," enacts that all packages of manufactured tobacco shall be labelled before leaving the manufactory, and provides for the issue of warrants to use cutting-machines for cutting duty-paid manufactured tobacco for sale (or to be used in the manufacture of cigarettes by hand), and to manufacture cigarettes by hand, under certain conditions.

The value of all the exports in 1895 was £8,550,224; the value of New Zealand produce exported, £8,390,153: being at the rate of £12 2s. 4d. per head of population. The following table gives the values of the several exports of New Zealand produce in each of the past ten years:—

EXPORTS OF NEW ZEALAND PRODUCE.

Year	Wool.	Gold.	Frozen Meat.	Butter and Cheese.	Agricultural Produce.	Manufactures	Other N.Z. Produce.	Total.
	£	£	£	£	£	£	£	£
1886	3,072,971	934,648	427,193	151,194	688,804	109,656	997,216	6,386,682
1887	3,321,074	747,878	455,870	109,383	588,022	124,382	1,204,372	6, 51,081
1888	3,115,098	914,309	628,800	197,170	905,907	233,383	1,260,461	7, 55,128
1889	3,976,375	785,490	783,374	213,945	1,424,297	569,880	1,288,647	9, 42,008
1890	4,150,599	751,360	1,087,617	207,687	1,289,864	547,947	1,393,687	9, 28,761
1891	4,129,686	1,007,172	1,194,724	236,933	894,467	420,357	1,516,755	9,400,094
1892	4,313,307	951,963	1,033,377	318,204	1,035,637	367,677	1,345,703	9,365,868
1893	3,774,738	915,921	1,085,167	354,271	716,546	345,636	1,365,164	8,557,443
1894	4,827,016	887,865	1,194,545	366,483	317,655	224,958	1,266,626	9,085,148
1895	3,662,131	1,162,181	1,262,711	378,510	326,029	188,702	1,409,889	8,390,153

The most important items of export under the heading "Other New Zealand Produce" are coal, silver, minerals, fish, oysters, fungus, kauri-gum, timber, bacon, salted and preserved meats, tallow, sheep- and rabbit-skins, hides, sausage-skins, and live stock. The aggregate value of these in 1895 was £1,370,698.

The above table shows that the value of the exports of New Zealand produce fell from £9,428,761 in 1890 to £9,400,094 in 1891, and again from £9,365,868 in 1892 to £8,557,443 in 1893, rose in 1894 to £9,085,148, and fell in 1895 to £8,390,153, a decrease of £694,995 on the figures for the previous year. The exports for any two calendar years may vary considerably, according as the bulk of a season's wool-clip is shipped at the close of one year or at the beginning of the next; and for comparison of quantities it is well to take the figures for two successive years ending 31st March, in order to include the whole of one clip in each year. The following are the figures for the years ended 31st March, 1895, and 31st March, 1896. The quantities exported are shown, with the increase or decrease on each item.

QUANTITIES OF THE PRINCIPAL ARTICLES OF NEW ZEALAND PRODUCE EXPORTED.

Items.	Year 1894-95.	Year 1895-96.	Increase in 1895-96.	Decrease in 1895-96.
The Mine:—				
Coal .. .. Tons	82,409	83,412	1,003	..
Gold .. .. Oz.	222,519	302,681	80,162	..
Silver .. .. "	60,836	83,892	23,056	..
Minerals .. .. Tons	303	636	333	..
The Fisheries:—				
Fish .. .. Cwt.	5,865	7,372	1,507	..
Oysters .. .. Doz.	614,775	567,615	..	47,160
The Forest:—				
Fungus .. .. Cwt.	4,270	4,994	724	..
Gum (kauri) .. Tons	8,104	7,165	..	939
Timber (sawn and hewn) Ft.	32,660,036	40,384,956	7,724,920	..
Animals and Produce:—				
Bacon and hams .. Cwt.	1,725	2,034	309	..
Beef (salted) .. "	5,356	5,231	..	125
Butter .. .. "	66,283	60,200	..	6,083
Cheese .. .. "	78,650	71,477	..	7,173
Hides .. .. No.	8,219	8,902	683	..
Live-stock .. .. "	17,717	15,563	..	2,154
Meat (preserved) .. Cwt.	32,977	39,604	6,627	..
" (frozen) .. "	1,122,242	1,171,521	49,279	..
Sausage-skins .. "	7,260	8,474	1,214	..
Skins (rabbit) .. No.	14,986,008	13,884,344	..	1,101,664
" (sheep) .. "	2,729,129	3,247,250	518,121	..
Tallow .. .. Tons	12,139	12,813	674	..
Wool .. .. Lb.	132,025,538	128,284,720	..	3,740,818
Agricultural Products:—				
Bran and sharps .. Tons	1,875	2,692	817	..
Chaff .. .. "	27	1,080	1,053	..
Flour .. .. "	807	947	140	..
Grain (barley) .. Bush.	19,063	41,642	22,579	..
" (beans and peas) "	191,906	190,443	..	1,463
" (malt) .. "	47,155	85,480	38,325	..
" (oats) .. "	2,210,726	1,900,537	..	310,189
" (wheat) .. "	81,431	72,380	..	9,051
" (maize) .. "	422	58,684	58,262	..
Hops .. .. Cwt.	2,136	3,005	869	..
Meal (oat) .. .. "	25,743	19,672	..	6,071
Potatoes .. .. Tons	2,207	4,623	2,416	..
Seeds (grass and clover) Cwt.	25,576	38,516	12,940	..
Manufactures:—				
Leather .. .. "	30,712	21,577	..	9,135
Phormium .. .. Tons	3,258	2,457	..	801

This statement shows, to some extent, an increase in the demand for the staple articles of New Zealand produce.

Some of the most important proportional increases are the following:—

Export of		Rate of Increase per Cent. in 1895-96.	Export of		Rate of Increase per Cent. in 1895-96.
Barley	Bush.	118·44	Sawn timber	Ft.	23·65
Potatoes	Tons	109·47	Preserved meat	Cwt.	20·10
Malt	Bush.	81·27	Sheepskins	No.	18·98
Seeds (grass and clover)	Cwt.	50·59	Bacon and hams	Cwt.	17·91
Bran and sharps	Tons	43·57	Flour	Tons	17·35
Hops	Cwt.	40·68	Fungus	Cwt.	16·96
Silver	Oz.	37·90	Sausage-skins	"	16·72
Gold	"	36·02	Hides	No.	8·31
Fish	Cwt.	25·69	Tallow	Tons	5·55
			Frozen meat	Cwt.	4·39

Besides the above increases, maize, of which only the trifling quantity of 422 bushels was exported in 1894–95, increased to 58,684 bushels in 1895–96; and the export of chaff increased from 27 to 1,080 tons during the same period.

On the other hand, there was a decrease in the percentage of exports as follows: Leather, 29·74; phormium, 24·58; oatmeal, 23·58; oats, 14·03; live-stock, 12·16; kauri-gum, 11·59; wheat, 11·11; butter, 9·18; cheese, 9·12; oysters, 7·67; rabbit-skins, 7·35. And a small decline is also observed in wool of 3,740,818lb., or 2·83 per cent., as compared with the quantities exported in the previous twelve months.

The next table shows the declared values of the chief articles exported in the years ending 31st March, 1895 and 1896, with increases and decreases for 1895–96:—

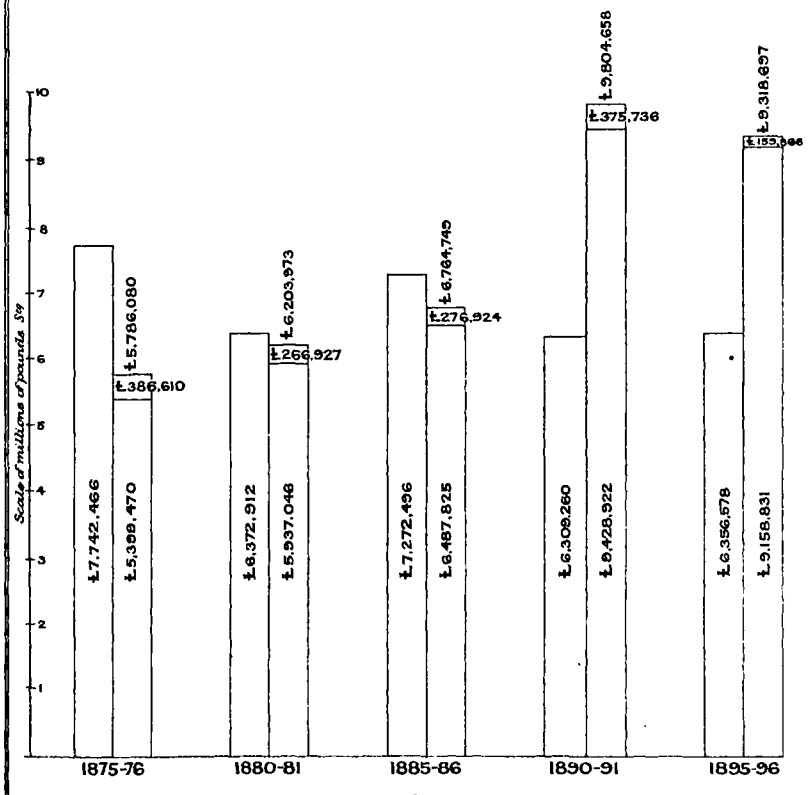
	Year 1894-95.	Year 1895-96.	Increase in 1895-96.	Decrease in 1895-96.
	£	£	£	£
THE MINE.				
Coal	82,229	79,922	..	2,307
Gold	889,613	1,196,059	306,446	..
Silver and minerals	8,937	13,940	5,003	..
Total	980,779	1,289,921	309,142	..
THE FISHERIES.				
Fish	6,091	8,855	2,764	..
Oysters	2,604	2,458	..	146
Other	2,228	2,764	536	..
Total	10,923	14,077	3,154	..
THE FOREST.				
Fungus	6,406	7,706	1,300	..
Kauri-gum	390,580	421,446	30,866	..
Timber—				
Sawn and hewn	121,341	147,004	25,663	..
Other	8,725	6,172	..	2,553
Total	527,052	582,328	55,276	..

	Year 1894-95.	Year 1895-96.	Increase in 1895-96.	Decrease in 1895-96.
ANIMALS AND PRODUCE.	£	£	£	£
Bacon and hams	6,755	6,556	..	199
Beef (salted)	5,738	5,420	..	318
Butter	263,246	241,647	..	21,599
Cheese	160,383	132,039	..	28,344
Hides	5,156	7,391	2,235	..
Live-stock	45,888	37,119	..	8,769
Preserved meats	61,631	69,908	8,277	..
Frozen meats	1,295,850	1,318,317	22,467	..
Rabbit-skins	92,450	75,679	..	16,771
Sausage-skins	39,812	45,706	5,894	..
Sheepskins and pelts	164,056	183,273	19,217	..
Tallow	236,271	253,717	17,446	..
Wool	4,198,348	4,299,407	101,059	..
Other	5,828	9,853	4,025	..
Total	6,581,412	6,686,032	104,620	..
AGRICULTURAL PRODUCTS.				
Bran and sharps	4,062	9,456	5,394	..
Chaff	121	3,301	3,180	..
Flour	4,845	7,152	2,307	..
Grain—				
Barley	2,859	5,826	2,967	..
Beans and peas	28,164	25,515	..	2,649
Maize	59	7,625	7,566	..
Malt	13,280	20,196	6,916	..
Oats	174,263	166,128	..	8,135
Wheat	9,100	12,716	3,616	..
Hops	10,181	10,397	216	..
Oatmeal	11,459	8,863	..	2,596
Potatoes	5,269	11,046	5,777	..
Seeds (grass and clover)	54,771	70,486	15,715	..
Other	6,275	11,870	5,595	..
Total	324,708	370,577	45,869	..
MANUFACTURES.				
Apparel	2,589	3,493	904	..
Leather	102,919	107,151	4,232	..
Phormium (New Zealand hemp)	42,727	27,508	..	15,219
Woollen manufactures	12,097	14,658	2,561	..
Other manufactures	55,038	42,404	..	12,634
Total	215,370	195,214	..	20,156
Miscellaneous	15,256	20,682	5,426	..
Total exports (colonial produce and manufactures)	8,655,500	9,158,831	503,331	..
Specie	8,405	33,468	25,063	..
Other exports (British and foreign)	133,834	126,398	..	7,436
Total exports	£8,797,739	£9,318,697	£520,958	..

If the calendar year be taken, the values for 1895 stand as follows:—

TRADE

Value of Imports and Exports for years ending 31st March 1876, 1881, 1886, 1891 and 1896.



Reference.

Imports ---------- *shewn thus* ☐

Exports of Colonial produce and manufactures --- " --- " ☐

Other exports (British and foreign) ---------- " -- - " ☐

Note Of the amount £375,736. value of re-exported goods for the year 1890-91, £241,564 was specie against £33,405 specie re exported in 1895-96

T.M.Grant, del't

The Mine.	£
Coal	83,342
Gold	1,162,181
Silver and minerals	13,906
Total	1,259,429

The Fisheries.	
Fish	8,172
Oysters	2,436
Other	4,452
Total	15,060

The Forest.	
Fungus	6,961
Kauri-gum	418,766
Timber—	
Sawn and hewn	141,892
Other	7,103
Total	574,722

Animals and Produce.	
Bacon and hams	6,450
Beef and pork (salted)	5,506
Butter	227,601
Cheese	150,909
Hides	8,067
Live-stock—	
Cattle	1,320
Horses	19,522
Sheep	15,641
Pigs and other live-stock	773
Preserved meats	66,137
Frozen meats	1,262,711
Rabbit-skins	85,022
Sausage-skins	45,016
Sheepskins and pelts	180,905
Tallow	260,999
Wool	3,662,131
Other	9,604
Total	6,008,314

Agricultural Products.	£
Bran and sharps	5,119
Chaff	571
Flour	3,213
Grain—	
Barley	3,129
Beans and peas	29,580
Maize	5,706
Malt	19,175
Oats	156,302
Wheat	1,891
Hops	9,617
Oatmeal	8,087
Potatoes	9,112
Seeds (grass and clover)	64,112
Other	10,415
Total	326,029

Manufactures.	
Ale and beer	2,340
Apparel	2,695
Cordage	1,624
Leather	108,260
Phormium (New Zealand hemp)	21,040
Soap	2,577
Woollen manufactures	14,411
Other manufactures	35,755
Total	188,702
Miscellaneous	17,897
Total exports (colonial produce and manufactures)	8,390,153
Specie	32,105
Other exports (British and foreign)	127,966
Total exports	£8,550,224

The re-export trade of the colony would seem from the subjoined figures to have been almost stationary for the last ten years:—

Exports of British, Foreign, and other Colonial Produce (excluding Specie).

	£		£
1886	147,831	1891	160,765
1887	129,691	1892	125,052
1888	148,078	1893	123,402
1889	139,347	1894	136,402
1890	140,555	1895	127,966

With these sums may be contrasted the re-export trade of New South Wales—a colony having less than double the population of New Zealand—which, exclusive of specie, amounted in 1894 to £2,676,606.

The quantity of wool exported in 1895 was 116,015,170lb., valued at £3,662,131. The annual production and the increase can be better estimated by taking the exports for the twelve months immediately preceding the commencement of shearing, and adding thereto the quantity used in the colony for manufacturing purposes.

The following shows the produce for each of the last ten years ending with the 30th September:—

Year *ending* 30th September.	Quantity exported.	Quantity purchased by Local Mills.	Total Annual Produce.
	Lb.	Lb.	Lb.
1886	89,485,757	1,879,999	91,365,756
1887	95,914,181	2,001,155	97,915,336
1888	89,276,268	4,079,563	93,355,831
1889	95,618,507	3,556,004	99,174,511
1890	102,522,185	2,979,293	105,501,478
1891	108,619,473	2,918,073	111,537,546
1892	110,860,050	3,388,954	114,249,004
1893	119,643,874	2,629,855	122,273,729
1894	128,480,457	2,476,155	130,956,612
1895	129,333,769	3,299,132	132,632,901

From these figures it appears that the wool-clip has increased by 45·17 per cent. within the last ten years, and this notwithstanding the large increase in the export of rabbit-skins, from 8,546,254 in 1886 to 15,229,314 in 1895,—which does not indicate any great relief from the rabbit-pest.

The increase in the wool-production is of course mainly due to the greater number of sheep—namely, 19,826,604 in April, 1895, against 15,254,198 in May, 1886. It will be apparent from the following table that the tendency of increase is towards the multiplication of the smaller flocks, whose owners are better able to cope with the rabbit difficulty than the large runholders:—

NUMBER OF FLOCKS, 1886 TO 1895.

Size of Flocks.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.
Under 500 ..	6,024	6,247	6,579	7,063	7,662	8,272	8,822	9,629	10,314	11,336
500 and under 1,000	1,189	1,139	1,182	1,381	1,528	1,691	2,033	2,239	2,427	2,497
1,000 and under 2,000	747	723	794	826	854	969	1,193	1,315	1,402	1,405
2,000 and under 5,000	532	531	524	597	580	666	761	836	933	904
5,000 and under 10,000	263	289	287	279	283	287	314	341	345	341
10,000 and under 20,000	228	221	213	239	236	239	231	241	230	232
20,000 and upwards	166	166	166	152	160	169	176	178	179	183
Total ..	9,149	9,316	9,745	10,537	11,309	12,293	13,530	14,779	15,837	16,898

The Victorian Year-book for 1894 gives the average price of Australian wool in London for the twenty-four years ended with 1892, showing a decline from 1s. 3d. to 9d. per lb.

	Per lb. s. d.		Per lb. s. d.		Per lb. s. d.		Per lb. s. d.
1869 ..	1 3	1875 ..	1 4½	1881 ..	1 2½	1887 ..	0 10¼
1870 ..	1 3¼	1876 ..	1 3¼	1882 ..	1 0½	1888 ..	0 10½
1871 ..	1 2¼	1877 ..	1 3	1883 ..	1 0½	1889 ..	0 10¼
1872 ..	1 3	1878 ..	1 2½	1884 ..	1 0½	1890 ..	0 11
1873 ..	1 3¼	1879 ..	1 2½	1885 ..	0 10½	1891 ..	0 9¾
1874 ..	1 2¾	1880 ..	1 2¾	1886 ..	0 9¼	1892 ..	0 9

The wool production and distribution for the world is given from the same source :—

Countries.	Wool produced, 1891.*	Countries.	Wool produced, 1891.*
Europe—		Australasia	661,164,000
United Kingdom ..	147,475,000	Argentine Republic ..	376,700,000
France	124,803,000	Cape Colony and Natal	128,682,000
Germany	54,894,000	Uruguay	42,000,000
Belgium	4,409,000	East Indies	72,000,000
Austria-Hungary ..	54,301,000	Russia (Asiatic) ..	66,000,000
Italy	21,385,000	Mesopotamia	31,555,000
All other European countries ..	8,818,000	Turkey (Asiatic), Persia, Afghanistan, Beluchistan, and Thibet ..	20,500,000
Portugal	10,362,000	Peru	6,700,000
Sweden	3,307,000	Persia	3,470,000
Spain	66,138,000	Egypt	2,800,000
Russia and Poland ..	291,500,000	Brazil	1,875,000
		British North American Provinces	12,000,000
		United States.. ..	307,100,000
		All other countries ..	48,000,000
Total Europe ..	787,392,000	Total out of Europe	1,780,546,000
Grand total	2,567,938,000lbs.		

The centres of wool-production have gradually shifted, as will be seen by the next table,† showing the percentage of the total imports into the United Kingdom at different periods :—

—	1844.	1850.	1860.	1870.	1880.	1890.
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
British Possessions—						
Australasia	26·8	59·5	39·9	66·5	64·9	66·2
South Africa ..	3·3	7·7	11·2	12·5	11·1	13.8
East Indies	4·2	4·7	13·6	4·2	6·3	5·4
Germany	33·2	12·3	12·4	1·7	1·5	1·1
South America ..	5·7	7·1	6·0	4·8	2·2	1·8

* The figures for this Table, excepting those for Australasia, have been compiled from information contained in a report issued by the Department of Agriculture, Washington, United States, 1893.

† Taken from "Wool and Manufactures of Wool," published by the Bureau of Statistics, Treasury Department, U.S.A.

At the beginning of this century most of the merino wool required for manufacture in England was obtained from Spain. In 1820 (about) Spanish wool was superseded by merino wool from Saxony and Silesia; some twenty years later, Australasian wools began to take the place of the German merino, and have ever since held command of the market.

The following paragraphs, as to increase of population in Europe and America creating a demand for Australasian wools, are taken from a report made in February, 1892, by the United States Consul-General Bourn to his Government:—

With an increased density of population in Europe there has been a gradual decrease in the number of sheep, as lands formerly used for pasturage are converted into tillage lands to meet the increased demand for food. From 1860 to 1890 the population of Europe increased from 286,000,000 to 356,000,000—an increase of 70,000,000, or about 25 per cent., necessitating a tillage of at least 25 per cent. more land to supply food for this increase.

During this period the number of sheep in Europe decreased from 229,600,000 in 1860 to 192,240,000 in 1890—a decrease of 37,000,000, or about 16 per cent.; while the number in the chief extra-European wool-producing and exporting countries increased from 63,200,000 in 1860 to 264,500,000 at the date of the latest estimates. But Europe in 1890 consumed fully 66 per cent. more wool than in 1860, while there were 16 per cent. less sheep to supply the requirement. It is easy, therefore, to see why new fields have been sought in other continents for the deficiencies both in food and clothing.

In 1860 there were not more than 40,200,000 sheep in the La Plata country, Australia, and South Africa, or scarcely 18 per cent. of the number in Europe. In 1890 this amount had increased to 221,500,000, or about the number in Europe in 1860.

There were 8,806,500 sheep in Italy in 1860, but in 1875 there were only 6,977,000. The number then grew again to 8,596,000 in 1881, to be again reduced to 6,900,000 in 1890—a decrease of 21 per cent. since 1860, as compared with 16 per cent. decrease for all Europe.

In the United States the process has been substantially the same. The increasing density of population in the east has gradually driven the flocks westward into newer territory, where they have largely increased, though not so rapidly as in the La Plata country, Australia, and South Africa. From 23,000,000 in 1860 they increased to 41,000,000 in 1870. At this time the market for wool was so depressed that the farmers found it profitable to kill upwards of 9,000,000, thus reducing the amount to 31,000,000. Since then the gradual increase brought the number to about 50,000,000 in 1884, to be again reduced by the competition of Australian wool to about 43,000,000 on the 1st January, 1891. This variation in the number of sheep has, however, its compensation in the greatly increased production per head. The yield in 1871 was about 5lb. for each sheep, while in 1884 and 1891 it was respectively about 6lb. and 7lb.

The amount of gold exported in 1895 was 293,493oz.

The total quantity of gold entered for duty to the 31st December, 1895, which may be reckoned as approximately the amount obtained in the colony, was 13,050,213oz., of the value of £51,351,002.

Frozen meat now takes second place among the exports of New Zealand produce. In 1895, 1,134,097cwt., valued at £1,262,711, were shipped in the colony. An account of the development of the industry was given in a special article in the Year-book, 1894. The total export for each year since the commencement of the trade has been:—

Year.	Lb.	Year.	Lb.
1882	1,707,328	1889	73,564,064
1883	9,853,200	1890	100,934,756
1884	28,445,228	1891	110,199,082
1885	33,204,976	1892	97,636,557
1886	38,758,160	1893	100,262,453
1887	45,035,984	1894	114,827,216
1888	61,857,376	1895	127,018,864

To ascertain the total value of the meat-export in 1895 it is necessary to take into consideration, with the amount of £1,262,711, value of frozen meat before stated, the value of preserved meats, £66,137; of salted beef and pork, £5,506; and of bacon and hams, £6,450.

Beef, mutton, lamb, and pork, &c., are used in the United Kingdom according to the following proportions: Beef, 52 per cent.; mutton and lamb, 24 per cent; pork, &c., 24 per cent. To the 24 per cent. of mutton and lamb, New Zealand contributes 2·02 per cent., the Argentine Republic 1·03 per cent., and Australia 0·35 per cent., making altogether 3·40 per cent. So that the total imports of frozen mutton at present represent only 3·40 per cent. of the total meat consumption of the United Kingdom.

The value of the grain exported in 1895 was £215,783. The grain exports were made up as under:—

	Bushels.	£
Wheat	14,568	1,891
Oats	2,003,270	156,302
Barley	21,975	3,129
Malt	78,045	19,175
Maize	45,588	5,706
Peas and beans	218,391	29,580
Total value		£215,783

The quantity of butter exported amounted to 57,964cwt., the declared value of which was £227,601. Of this quantity, 55,194cwt., valued at £215,619, were shipped to the United Kingdom; 1,233cwt., value £5,051, to New South Wales; 504cwt., value £2,038, to Victoria; 484cwt., value £2,271, to Fiji; 312cwt., value £1,637, to the South Seas; and 188cwt., value £757, to Western Australia.

If the export of butter is to assume any large dimensions it must be through the production of an article suitable to the requirements of the English market, on which the colony has for the present to rely. It has been satisfactorily proved that butter from New Zealand can be delivered in good condition in England, and that for good samples remunerative prices are obtainable; but it is necessary that the butter sent should be not only sound, but also uniform in quality and colour. Such uniformity can be obtained only by the methods used in butter-factories. Upon the multiplication of these factories the future of the butter-export trade, with all its great possibilities, seems to depend.

The cheese exported was 76,743cwt., of a declared value of £150,909, of which 73,369cwt., valued at £142,913, were sent to the

United Kingdom; 1,410cwt., value £3,238, to New South Wales; 905cwt., value £1,961, to Queensland; and 384cwt., value £1,065, to the other Australian Colonies. While the quantity of butter exported—57,964cwt.—in 1895 shows an increase of 150 per cent. on the quantity exported in 1886, the increase in the export of cheese during the ten-year period has been at the rate of 367 per cent.—76,743cwt. in 1895, as against 16,429cwt. in 1886.

The following statement shows the total quantity of butter and cheese exported in the past ten years, and the amount of either commodity sent to the United Kingdom:—

Year.	Total Export of Butter.	Butter Exported to the United Kingdom.	Total Export of Cheese.	Cheese Exported to the United Kingdom.
	Cwt.	Cwt.	Cwt.	Cwt.
1886	23,175	635	16,429	17
1887	17,018	6,937	23,913	9,900¾
1888	29,995	11,460	36,682	25,436¼
1889	37,955	21,099	26,558	7,633
1890	34,816	26,579	40,451	31,043
1891	39,430	28,989	39,770	29,565
1892	53,930	41,509	41,493	30,000
1893	58,149	52,363	46,201	41,567
1894	60,771	58,845	55,655	54,540
1895	57,964	55,194	76,743	73,369

The export of phormium fell from 4,677 tons in 1894 to 1,806 tons in 1895, a decrease of over 61 per cent. The market price continues low—averaging under £12 a ton—a state of things not encouraging to producers. Any considerable rise in the value of the fibre will doubtless result in temporarily increasing the output; but a large permanent development of this industry depends on the cultivation and careful selection of the plants used, and on improvements in the method of preparing the fibre.

There were 7,425 tons of kauri-gum, valued at the rate of £56 8s. a ton, exported from the colony in 1895. This gum is obtained only in the extreme northern part of the colony.

The following table gives the values of the exports from each port in New Zealand for the last two years, arranged in order of magnitude for 1895:—

	1895.	1894.
	£	£
Lyttelton	1,635,331	1,598,811
Auckland	1,302,075	1,174,920
Wellington	1,140,354	1,558,334
Dunedin	1,047,489	955,862
Napier	870,422	1,135,155
Invercargill and Bluff	595,277	658,231
Timaru	474,858	523,876
Oamaru	300,893	259,801
Greymouth	257,065	232,031
Wanganui	241,053	345,279

	1895.	1894.
	£	£
Poverty Bay	136,539	220,536
Wairau and Picton	123,355	164,398
New Plymouth and Waitara ..	108,846	72,450
Kaipara	90,621	66,738
Hokitika	74,546	91,470
Nelson	63,727	72,606
Westport	40,736	39,430
Patea	40,347	55,019
Tauranga	1	3

The exports from the North and South Islands respectively during the two years were as under :—

Year.	North Island.	South Island.	Proportion to Total Export.	
	£	£	North Island.	South Island.
1894	4,628,434	4,596,516	50·17	49·83
1895	3,930,258	4,613,277	46·00	54·00

The total value of the external trade in 1895 was £14,950,353, equivalent to £21 11s. 10d. per head of the population, excluding Maoris. The figures given further on show that the ratio of trade to population has varied but little for several years. The highest record was in 1873, when the total trade per head reached £41 19s. 3d. ; the imports, in consequence of the large expenditure of borrowed money, amounting at that time to £22 9s. 4d. per head, against £9 4s. 10d. in 1895.

It has been customary to exclude the Maoris in estimating the trade per head, for their industries and necessities swell the volume of trade in comparatively so slight a measure that the amount per head of European population can be more truly ascertained by omitting them altogether.

The values of imports and exports per head of population, excluding Maoris, were, for each of the past ten years, as follow :—

Year.	Imports per Head.	Exports per Head.	Total.
	£ s. d.	£ s. d.	£ s. d.
1886	11 12 2	11 9 3	23 1 5
1887	10 9 5	11 10 3	21 19 8
1888	9 16 4	12 16 7	22 12 11
1889	10 5 6	15 4 5	25 9 11
1890	10 0 2	15 13 8	25 13 10
1891	10 6 6	15 3 10	25 10 4
1892	10 16 3	14 16 11	25 13 2
1893	10 9 0	13 11 9	24 0 9
1894	9 19 11	13 11 10	23 11 9
1895	9 4 10	12 7 0	21 11 10

The trade with the United Kingdom amounted to £11,038,005, comprising nearly 74 per cent. of the total.

With the Australian Colonies and Tasmania, trade was done

during 1895 to the value of £2,296,878; of which New South Wales claimed £1,344,864, and Victoria £719,095, made up as follows:—

EXPORTS FROM NEW ZEALAND.

	£
To New South Wales, 1895	625,691
„ Victoria, 1895	350,931

EXPORTS TO NEW ZEALAND.

	£
From New South Wales, 1895	719,173
„ Victoria, 1895	368,164

The latter amounts are the declared values of the imports into New Zealand from the colonies mentioned, not their export-value as given in the New South Wales and Victorian returns.

Included in the exports from New South Wales is coal valued at £91,816, and gold coin, £210,000. The exports from Victoria include specie to the amount of £60,060.

The trade with Fiji showed a slight decrease during the year. In 1890 it was £184,684; in 1891, £221,603; in 1892, £214,183; in 1893, £194,729; in 1894, £266,239; and in 1895, £259,085. The trade with the other Pacific Islands (including Norfolk Island) decreased from £159,916 in 1894, to £149,129 in 1895.

Of the exports to the United States in 1895 the values of the principal New Zealand products were: Kauri-gum, £275,862; sheepskins, £11,624; sausage-skins, £7,939; rabbit-skins, £5,932; hides, £2,762; wool, £2,275: and phormium, £1,056.

The following table shows the value of the total trade with the United States for each of the past ten years:—

TRADE WITH THE UNITED STATES.

Year.	Imports from		Exports to		Total Trade.
	Atlantic Ports.	Pacific Ports.	Atlantic Ports.	Pacific Ports.	
	£	£	£	£	£
1886	304,571	32,751	166,926	80,474	584,722
1887	263,377	35,359	241,388	168,092	708,216
1888	285,864	37,205	204,302	119,414	646,785
1889	307,156	35,280	242,778	98,584	683,798
1890	321,047	34,348	364,332	218,802	938,529
1891	317,913	43,882	395,386	119,822	877,003
1892	344,799	36,828	459,314	61,483	902,424
1893	345,743	33,635	430,842	65,706	875,926
1894	359,196	35,495	230,829	56,367	681,887
1895	351,823	42,410	298,536	18,103	710,872

The trade with India and Ceylon reached a total of £235,272, against £195,718 in 1894. The imports—tea, rice, castor-oil, wool-packs, &c.—were reckoned at £233,135, leaving a balance of only £2,137 for exports.

The following table gives the value of the imports and exports of the Australasian Colonies for the year 1895 :—

Colony.	Total Value of		Excess of Exports over Imports.
	Imports.	Exports.	
	£	£	£
Queensland	5,349,007	8,982,600	3,633,593
New South Wales	15,992,415	21,934,785	5,942,370
Victoria	12,472,344	14,547,732	2,075,388
South Australia	5,585,601	7,177,038	1,591,437
Western Australia (1894)	2,114,414	1,251,406	*
Tasmania	1,094,457	1,373,063	278,606
New Zealand	6,400,129	8,550,224	2,150,095

In the preceding table is given the total trade inwards and outwards of each colony, counting twice over the value of goods produced in one colony and carried thence into another, and reckoning the same goods three times where they are imported from without into one colony and re-exported thence in the same year into another colony. But, in order to form a just idea of the trade of the Australasian Colonies as a whole, it is necessary to eliminate the inter-colonial traffic altogether. From the following table the value of imports and exports exchanged between the various colonies has accordingly been excluded :—

EXTERNAL TRADE OF AUSTRALASIA.

Year.	Total Trade.	Imports.	Exports.	Excess of Imports.	Excess of Exports.
	£	£	£	£	£
1885 ..	72,220,444	41,136,038	31,084,406	10,051,632	..
1890 ..	75,143,818	38,451,160	36,692,658	1,758,502	..
1891 ..	84,565,778	41,325,033	43,240,745	..	1,915,712
1892 ..	75,325,933	34,529,501	40,796,432	..	6,266,931
1893 ..	67,788,738	27,925,990	39,862,748	..	11,936,758
1894 ..	65,192,202	26,063,630	39,128,572	..	13,064,942

It will be observed that in the year 1885 the excess of imports over exports for Australasia amounted to no less a sum than £10,051,632, and that five years later the excess of imports had fallen to £1,758,502. In 1891 the position was completely reversed, the exports exceeding the imports by £1,915,712. This excess increased to £6,266,931 in the following year (1892), and to £13,064,942 in 1894. The change indicates that as a result of recent financial disturbances the purchasing power of these colonies has considerably lessened.

* Excess of imports over exports, £863,008.

The fall in prices of colonial produce, to which the reduction that has taken place of late in the total value of exports is due, is generally considered to have been the result of several causes working simultaneously, viz.: the appreciation of gold, greater competition of producers throughout the world, increase in facilities of transport and communication, and improvement of machinery used in production.

It has, however, been argued that prices are really regulated by credit; that credit is but slightly affected by the amount of money or gold in existence, and that the whole volume of credit throughout the world has been enormously lessened since and as the result of the Baring crisis, in 1890. The *Statist* (October 27th, 1894) thus alludes to this:—

Until the volume of credit expands it is impossible that prices should rise. On the contrary, every contraction of credit has necessitated a fall in prices. The newer countries, which produce food and raw materials for the older countries, have been compelled to sell at whatever prices they could obtain, because they could not get credit in London, and because they were compelled to meet their obligations. But, as distrust at home here prevented speculation, there was a paucity of buyers; and such buyers as there were, not being very eager, held aloof in the hope of getting better and ever better terms. So the embarrassments of the producing countries, and the distrust of the capitalist countries, have made it more difficult to carry on transactions, and at last sales have been effected only by continually reducing prices.

There is nothing mysterious, or puzzling, or incomprehensible in all this when it is looked at from the right standpoint. And it is perfectly clear that no increase in the gold production could have any material influence upon what has happened. Gold is employed only to a very small fractional extent, either in international dealings or in the wholesale markets for commodities within the same country, and the mere additions made to the amount of gold could consequently have no effect upon prices. If credit had been good, the increase in the gold output would have enabled the banks to lend and discount more freely than before; and every addition to the loans and discounts would have been an addition to the volume of credit existing, and so would have tended to send up prices.

The trade per head of the population in each of the colonies was as follows:—

TRADE PER HEAD OF THE POPULATION IN 1895.

Colony.	Mean Population.	Imports.	Exports.	Total Trade.
		£ s. d.	£ s. d.	£ s. d.
Queensland	452,852	11 16 3	19 16 9	31 13 0
New South Wales	1,264,660	12 12 11	17 6 11	29 19 10
Victoria	1,180,040	10 11 5	12 6 7	22 18 0
South Australia	348,539	16 0 6	20 11 10	36 12 4
Western Australia (1894) ..	77,220	27 7 8	16 4 1	43 11 9
Tasmania	159,145	6 17 6	8 12 7	15 10 1
New Zealand (exclusive of Maoris)	692,417	9 4 10	12 7 0	21 11 10

The values of the exports of the Australian Colonies, more especially New South Wales, Victoria, and South Australia, are largely increased by the inclusion of articles the produce or manufacture of other colonies and countries.

The value of home productions or manufactures exported from each colony in 1895, and the rate per head of mean population, were as follow:—

Colony.	Home Produce exported. £	Per Head of Population. £ s. d.
Queensland	8,865,538 ..	19 11 7
New South Wales	16,436,210 ..	12 19 11
Victoria	11,615,493 ..	9 16 10
South Australia	3,537,751 ..	10 3 0
Western Australia (1894) ..	1,219,047 ..	15 15 9
Tasmania	1,305,160 ..	8 4 0
New Zealand	8,390,153 ..	12 2 4

The next table sets forth the amount of the trade of each of the above-named colonies with the United Kingdom in 1895:—

Colony.	Imports from the United Kingdom.	Exports to the United Kingdom.	Total Trade with the United Kingdom.
	£	£	£
Queensland	2,308,695	3,418,516	5,727,211
New South Wales	6,420,107	9,371,418	15,791,525
Victoria	4,759,546	8,068,121	12,827,667
South Australia	1,857,989	2,362,593	4,220,582
Western Australia (1894)	611,308	330,216	941,524
Tasmania	315,172	202,870	518,042
New Zealand	3,992,359	7,045,646	11,038,005

The statement appended shows the relative importance of the Australasian Colonies as a market for the productions of the United Kingdom:—

EXPORTS OF HOME PRODUCTIONS FROM THE UNITED KINGDOM, IN 1894, TO—

	£
British India and Ceylon	30,244,246
United States	18,799,485
Germany	17,796,129
Australasia	16,025,573
France	13,525,570
Holland	8,787,415

The exports to other countries did not amount to £8,000,000 in any one case.

The Australasian Colonies as a whole, with a population of 4,000,000, thus take the fourth place in importance as consumers of British produce, the exports thereto being more than half the value of similar exports to British India, with its 290,000,000 inhabitants.

The staple products of these colonies must for some time to come be the work of the runholder, the farmer, and the

miner. So long as there remain large areas of land capable of improvement and more lucrative occupation, as well as considerable mineral resources awaiting further development, no such increase in manufactures can be looked for as would enable colonial to supersede English goods in any material degree. The consumption per head may fall somewhat in the future, as the proportion of adults decreases owing to lessened immigration; but the relatively high rates of wages, and the absence of any widespread pauperism, should maintain a standard of living far above that existing in older countries. The rapid growth of population in Australasia may thus be expected largely to increase the demand for English products; indeed, there is every reason to believe that in the near future these colonies will become the most important market open to the English manufacturer.

Postal and Electric Telegraph.

There were 1,404 post-offices in New Zealand at the end of 1895.

The number of letters, letter-cards, post-cards, books, and pattern-packets, newspapers, and parcels dealt with during the year, compared with the number handled in 1894, was as under:—

	Total Number dealt with. 1895.	1894.	Increase.
Letters	28,949,936 ..	27,640,011 ..	1,309,925
Letter-cards.. ..	637,013 ..	Nil ..	637,013
Post-cards	1,201,633 ..	1,253,840 ..	52,207*
Books and pattern-packets	10,847,124 ..	9,414,051 ..	1,433,073
Newspapers	12,675,973 ..	12,333,708 ..	342,265
Parcels	176,206 ..	174,264 ..	1,942

The system of postal statistics has recently been modified, and the returns given throughout this report refer to the total correspondence dealt with counted once: *i.e.*, the total number of letters, &c., posted, *plus* those received from abroad.

The average number of letters, &c., posted per head of the population in each of the past five years was,—

	1891.	1892.	1893.	1894.	1895.
Letters	37·70	39·75	38·93	38·02	39·87†
Post-cards	1·88	2·10	2·10	1·84	1·73
Books and parcels ..	6·08	10·55	10·13	10·39	12·27
Newspapers	13·87	14·04	13·39	12·94	12·95

The facilities afforded for the transmission of parcels through the Post Office to places within and without the colony have proved of much convenience to the public. The regulations admit of parcels up to 11lb. in weight being sent to almost all the important countries of the world:

The number and weight of parcels dealt with in 1890, 1892, 1894, and 1895 are given. The word "parcels" in the preceding table includes the parcels herein mentioned:—

* Decrease. † Including letter-cards.

1890.		1892.		1894.		1895.	
No.	Weight.	No.	Weight.	No.	Weight.	No.	Weight.
	Lb. oz.		Lb. oz.		Lb. oz.		Lb. oz.
136,327	380,521 8	164,703	502,125 0½	174,264	540,315 8	176,206	582,193 8½

Owing to the greatly reduced book-post rates a large number of the lighter packets of the classes formerly sent by parcel-post continue to be diverted to the packet- and sample-post. This fact accounts for the small increase in the number of parcels.

The following table shows the number of parcels exchanged with the United Kingdom, the Australian Colonies, &c., in 1894 and 1895:—

Country.	Number of Parcels.			
	Received.		Despatched.	
	1894.	1895.	1894.	1895.
United Kingdom and foreign offices *viâ* London	13,147	13,681	3,325	3,524
Victoria	2,560	2,558	1,246	1,457
New South Wales	2,225	2,504	1,075	1,348
Queensland	141	159	205	196
South Australia	215	238	170	176
Tasmania	144	133	279	246
Western Australia	52	64	95	181
Samoa	21	26	72	109
Tonga	..	..	12	..
Rarotonga	15	14	45	39
Ceylon	25	47	19	11
Straits Settlements	22	15	4	8
Hawaiian Islands	..	15	..	3
Totals	18,567	19,454	6,547	7,298

The declared value of the parcels received from places outside the colony was £26,668 14s. 9d., on which the Customs duty amounted to £5,917 12s. 9½d.

The number of offices open for the transaction of money-order business at the end of 1895 was 364.

During 1895, 243,497 money-orders, for a total sum of £812,604 14s. 11d., were issued at the various post-offices in the colony. The money-orders from places beyond New Zealand and payable in the colony numbered 21,458, for the amount of £75,018 6s. 7d.

The number of offices open for the sale of postal notes at the end of 1895 was 411. 341,383 postal notes were sold, value £122,128 8s. 1d. (including £2,359 11s. 8d. commission).

The notes paid numbered 339,397, value £119,655 3s. 6d.

The cost of the various mail-services between England and New Zealand was, in 1895, as follows:—

SAN FRANCISCO SERVICE.

	£	s.	d.
Payments—			
Subsidies, &c.	24,670	7	5
Interprovincial and other charges ..	3,704	10	8
	£28,374	18	1
Receipts—			
Postages received from England and the Australian Colonies	10,546	4	10
Postages collected in the colony	10,518	2	11
	£21,064	7	9
Loss to the colony	£7,310	10	4

PENINSULAR AND ORIENTAL AND ORIENT LINES SERVICES.

	£	s.	d.
Payments—			
To P. and O. and Orient Lines	3,122	8	5
Transit across Australia	143	12	3
" European Continent ..	488	11	3
Intercolonial services	1,597	14	9
	£5,352	6	8
Receipts—			
Postages collected from England and from foreign offices	921	19	6
Postages collected in the colony	2,728	0	10
	£3,650	0	4
Loss to the colony	£1,702	6	4

The total amount of postages collected and contributions received for all these services in 1895 was £24,714 8s. 1d.

The average number of days in 1895 within which the mails were delivered between London and each of the under-mentioned ports in New Zealand was as follows:—

London to—	San Francisco Service.	P. and O. Line.	Orient Line.
Auckland	32·85	41·00	42·50
Wellington	34·85	41·50	41·42
Dunedin	36·08	42·60	42·90
Bluff	36·83	41·85	42·15

There were 6,245½ miles of telegraph-line open at the end of March, 1896, carrying 15,764¼ miles of wire. 2,124,211 telegrams were transmitted during the year; of these, the private and Press messages numbered 1,899,632, which, together with other telegraph receipts, yielded a revenue of £123,112 6s. 9½d.

There were sixteen telephone exchanges and ten sub-exchanges on the 31st March, 1896. The number of connections increased from 4,616 in March, 1895, to 5,143 in March, 1896.

The subscriptions to these exchanges during the financial year amounted to £25,933 12s. 9d.

The capital expended in connection with the several telephone exchanges up to the 31st March, 1896, was £125,108 4s. 1d.

FINANCE, ACCUMULATION, AND PRODUCTION.

General Government Finance.

For the year ended 31st March, 1896, the actual receipts from all sources amounted to £4,556,015, while the actual expenditure during the same period was £4,370,481. The excess of revenue over expenditure was therefore £185,534. Adding £180,024, the credit balance at the beginning of the year, increases the excess to £365,558. Deducting from this £150,000 paid over to the Public Works Fund, the net surplus on 31st March, 1896, is found to be £215,558.

The chief heads of revenue and expenditure are shown in the following table:—

REVENUE AND EXPENDITURE.

Revenue.	£	£	*Expenditure.*	£	£
Customs duties ...	1,649,310		Permanent appropriations—		
Stamps ...	707,188		Civil List ...	23,045	
Land-tax ...	271,394		Charges for Interest and Sinking Fund ...	1,683,775	
Income-tax ...	92,778		Under special Acts ...	200,558	
Property-tax ...	55		Payments to local bodies ...	145,295	
Beer duty ...	62,658		Annual appropriations for departmental services—		
Railways ...	1,182,280		Legislative ...	18,538	
Registration and other fees ...	48,435		Colonial Secretary ...	72,381	
Marine dues ...	20,560		Colonial Treasurer ...	24,784	
Miscellaneous ...	72,420		Minister of Justice ...	122,729	
Territorial revenue ...	291,673		Postmaster-General ...	331,062	
		4,398,751	Commissioner of Trade and Customs ...	62,742	
			Commissioner of Stamps ...	22,566	
			Minister of Education	420,156	
			Lunacy and Charitable Aid ...	53,129	
			Labour Department	8,088	
			Minister of Mines ...	15,807	
			Minister of Agriculture	43,548	
			Working Railways ...	743,670	
			Minister of Public Works ...	46,939	
			Defence Department ...	68,648	
			Police Department ...	98,272	
			Department of Lands and Survey ...	121,534	
			Rates on Crown lands	493	
			Services not provided for ...	22,423	
			Advances to Settlers Office Management Account ...	20,500	
					4,370,481
Other receipts—			Other expenditure—		
Proceeds debentures for Sinking Fund accretions ...	145,400		Paid to Public Works Fund ...		150,000
Recovery from Cheviot Estate purchase ...	11,864		Surplus on March 31, 1896		215,558
		157,264			
Surplus on March 31, 1895		180,024			
		£4,736,039			£4,736,039

Territorial revenue is made up of: Cash land sales, £73,521; deferred-payment land sales, £53,050; pastoral leases, rents, and miscellaneous, £165,102. The expenditure under special Acts of the Legislature includes, amongst other items, £20,813 contributed towards the maintenance of the Australasian naval squadron; pensions, compensations, allowances, &c., £36,740; grants and contributions in aid of our universities, £7,000; subsidies to hospitals and charitable institutions, £89,986; and payments to members of both Houses of Parliament, £21,598.

"Services not provided for" includes £11,333 expended in the purchase of Martini-Henry rifles, and £7,693 for the first progress-payment in respect of the contract for the building of the new cable steamer and lighthouse tender, the "Tutanekai."

Besides expenditure out of revenue, there was also an expenditure out of the Public Works Fund of £412,330. Of this amount £197,105 was for construction of railways, £66,715 for roads, £76,240 for public buildings, £35,538 for telegraph extension, £14,300 for the Public Works Department, £9,345 for the development of goldfields, £7,409 for lighthouses and harbour-works, £5,000 for contingent defence, £289 on services not provided for, £59 moiety of subsidy to a County Council, and £340 for rates on Native lands, while on account of immigration there was a recovery of £10.

In addition to the above, £108,168 were spent on roads and bridges under "The Lands Improvement and Native Lands Acquisition Act, 1894"; under the same Act, and "The Native Land Purchases Act, 1892," £163,411* were expended in buying Native lands; while a further sum of £168,467 was paid in acquiring estates under provisions of the Land for Settlements Acts; and £5,499 were disbursed for surveys, roads, &c., on the Cheviot Estate.

On the 31st March last the gross total ways and means available in the Public Works Fund, the Lands Improvement Account, and the Native Lands Purchase Account amounted to £134,418; and Parliament, by passing the Aid to Public Works and Land Settlement Act of 1896, made the following additional sums available:—

	£
For railways	250,000
For development of goldfields	200,000
For development of thermal-springs and natural scenery	50,000
For the Lands Improvement Account	250,000
For the Native Lands Purchase Account	250,000
Total	£1,000,000

It was also proposed to transfer from revenue to the credit of the Public Works Fund £150,000, and about £20,000 is expected from other sources, making a gross total sum available of £1,304,418. The liabilities on the 31st March last were £320,636: after providing for these there is left an available sum of £983,782.

* Out of this amount £54,589 was spent on roads.

The expenditure on the services provided for under the Public Works Fund since 1884 was:—

Year.	Immigration.	Railways.	Roads.	Development of Goldfields.	Telegraph Extension.	Public Buildings.	Lighthouses, &c.	Other Services.	Totals.
	£	£	£	£	£	£	£	£	£
1884-85...	57,148	663,063	317,043	8,029	25,799	117,361	31,033	114,251	1,336,727
1885-86...	11,675	725,496	335,904	9,032	36,010	86,859	133,975	136,435	1,475,386
1886-87...	12,454	615,265	278,617	7,655	18,952	89,598	148,705	162,228	1,333,484
1887-88...	15,598	403,726	219,519	1,016	22,984	90,529	76,825	135,962	966,159
1888-89...	8,791	272,077	106,440	55	12,047	34,592	47,593	132,344	613,939
1889-90...	867	289,572	84,126	284	16,346	35,473	9,434	46,362	482,464
1890-91...	1,823	180,020	71,289	621	16,292	22,819	2,666	39,026	334,756
1891-92..	817	154,416	101,605	2,257	27,773	34,791	7,347	62,495	391,501
1892-93...	242	220,894	105,506	3,811	29,245	31,101	11,205	60,502	462,506
1893-94...	343	176,304	147,418	5,272	16,127	44,032	6,588	10,713	406,797
1894-95...	101	247,545	61,757*	5,865	19,229	54,190	3,145	9,578	401,410
1895-96...	Cr. 10	197,105	66,774*	9,345	35,538	76,240	7,409	19,928	412,329
Totals	109,849	4,145,483	1,695,998	53,452	276,342	717,585	488,925	929,824	8,617,458

Local Government Finance.

Besides the revenue raised by the General Government, all the County and Borough Councils, Town, Road, River, Harbour, and Drainage Boards have power to levy rates and obtain revenue from other sources.

The colony is divided into 95 boroughs and 81 counties: within the latter there are 241 road districts and 39 town districts, not including the special town district of Rotorua, constituted under "The Thermal-Springs Districts Act, 1881."

The following table shows the receipts from rates and other sources, with the expenditure and outstanding loans, of the local governing bodies for eight financial years:—

Year.	Receipts of Local Bodies.		Expenditure.	Outstanding Loans.
	From Rates.	From Government and other Sources, including Loans.		
	£	£	£	£
1887-88	433,831	1,306,661	1,819,787	5,812,803
1888-89	445,928	992,567	1,560,604	5,892,050
1889-90	460,302	914,413	1,476,539	5,978,059
1890-91	463,581	899,666	1,381,319	6,042,693
1891-92	488,824	907,420	1,400,467	6,081,934
1892-93	508,157	1,050,214	1,482,548	6,203,869
1893-94	551,412	1,304,869	1,589,124	6,614,824
1894-95	581,868	1,012,655	1,584,518	6,685,510†

* £103,076 also spent on roads, under Lands Improvement and Native Lands Purchase Accounts, in 1894-95, and £162,757 in 1895-96.

† Not including loans amounting to £623,918, repayable to General Government by annual instalments.

Full particulars relating to local finance will be found under the head "Local Governing Bodies."

Taxation.

The direct taxation prior to 1892 consisted of a property-tax of 1d. in the pound on all assessed real and personal property (with an exemption of £500) and the stamp duties; but in 1891 a Land and Income Assessment Act was passed repealing the property-tax. A full description of the system of the land- and income-tax is given by the Commissioner in a special article in Part III. of this book, and to this attention is particularly directed. The leading features only are briefly stated here.

The Assessment Act of 1891 provides for an ordinary land-tax on the actual value of land, and an owner is allowed to deduct any amount owing by him secured on a registered mortgage. Under the original Act the deduction for improvements might not exceed £3,000; but, by the Amendment Act of 1893, the value of all improvements whatsoever is exempted from liability to land-tax. Besides this, an exemption of £500 is allowed when the balance, after making deductions as above stated, does not exceed £1,500; and above that a smaller exemption is granted, but ceases when the balance amounts to £2,500. Mortgages are subject to the land-tax. The revenue from the ordinary land-tax is, in round numbers, about £200,000 per annum. The rate of ordinary land-tax for 1895–96 was 1d. in the pound.

In addition to the ordinary land-tax, there is a graduated land-tax which commences when the unimproved value is £5,000. For the graduated land-tax, the present value of all improvements is deducted; but mortgages are not deducted. The Act of 1893, while reducing the ordinary taxation on land by exempting all improvements, increased the graduated-tax, and the revised rates are now one-eighth of a penny in the pound sterling when the value is £5,000 and is less than £10,000, from which the rate increases with the value of the property by further steps of an eighth of a penny until the maximum of 2d. in the pound is reached, payable when the value is £210,000, or exceeds that sum.

This graduated tax yields, in round numbers, £80,000 per annum, which is not included in the sum of £200,000 given above. Twenty per cent. additional tax is levied in case of persons who have been absent from the colony for three years or more prior to the passing of the yearly taxing Act. This amounts to about £1,000, and is included in the £80,000 shown above.

Income-tax is levied on all incomes above £300, and from taxable incomes a deduction of £300 is made. The rate of income-tax for 1895–96 was 6d. in the pound on the first taxable £1,000, and 1s. in the pound on taxable incomes over £1,000.

Companies pay 1s. in the pound, and are not allowed the £300 exemption. The Act of 1893 further disallowed the £300 exemption in the case of persons not domiciled in New Zealand.

The indirect taxation is made up of Customs duties, and excise duty on beer made in the colony. The following statement shows the amount raised by taxation in each of the past fourteen years :—

	Amount of Revenue raised by Taxation.	Amount per Head of Population (excluding Maoris).
	£	£ s. d.
1882	1,956,557	3 16 10
1883	1,957,080	3 13 11
1884	1,815,674	3 5 9
1885	2,016,730	3 10 10
1886	1,882,050	3 4 8
1887	1,876,235	3 2 11
1888	2,031,658	3 7 1
1889	2,090,405	3 8 4
1890	2,173,985	3 10 0
1891	2,179,739	3 9 2
1892	2,339,511	3 12 10
1893	2,353,250	3 11 2
1894	2,300,350	3 7 9
1895–96	2,335,761	3 7 1

As the Maoris contribute somewhat to the Customs revenue, an allowance should be made on that account to ascertain more correctly the amount of taxation per head of the rest of the people. By including Maoris the Customs and excise duties per head of the rest of the population would be reduced by 2s. 8d. for the year 1895–96. If this amount be deducted from the taxation per head given for that year, the rate would be reduced from £3 7s. 1d. to £3 4s. 5d. This latter rate may fairly be used for comparison with the rates in the neighbouring colonies.

The following were the rates of taxation per head in the Australasian Colonies in 1894, specifying the proportions derived from Customs and other taxes :—

Colonies.	Rate of Taxation per Head of Mean Population.			Proportion of Taxation from Customs Duties.	Ratio of Taxation by Customs to Value of Imports.
	Customs.	Other Taxes.	Total.		
	£ s. d.	£ s. d.	£ s. d.	Per Cent.	Per Cent.
Queensland ..	2 10 5	0 12 0	3 2 5	80·84	25·52
New South Wales	1 13 5	0 11 0	2 4 5	75·24	13·07
Victoria ..	1 9 3	0 13 3	2 2 6	68·74	13·77
South Australia	1 8 10	0 15 4	2 4 2	65·26	7·96
Western Australia	5 7 6	0 8 3	5 15 9	92·86	19·63
Tasmania ..	1 16 2	0 17 6	2 13 8	67·30	28·78
New Zealand ..	2 6 4	1 1 5	3 7 9	68·40	23·18

The various local bodies levied taxation during the year ended 31st March, 1895, to the amount of £676,555, or 19s. 10d. per head of European population. Of the total sum, £401,571 were raised by general rates, £180,297 by special and separate rates, £74,035 by licenses, and £20,652 by other taxes.

Loans for Government Advances to Settlers.

A notable feature in the legislation of the year 1894 was the passing of the Government Advances to Settlers Act, of which a description will be found in the next part of this volume. The Act authorised the raising of three millions sterling, in sums not exceeding a million and a half in each financial year, within two years from the date of the passing of the Act. The Loan Agents in London accordingly called for tenders for a million and a half of 3-per-cent. inscribed stock, to be lodged at the Bank of England on or before the 3rd May, 1895. The average price realised was £94 8s. 9d., applications having been made for £5,960,400, at prices varying from £100 to £90, of which about 33 per cent. of the tenders at £94 8s. were accepted, those above that price being allotted in full. The total cash receivable was £1,416,601 2s. (For particulars of terms and transactions see article by the Superintendent in Part III.)

New Zealand Consols.

Another important financial Act, termed the New Zealand Consols Act, was also passed in 1894, with the intention of providing further means of investment for the savings of persons resident in the colony. Up to the 31st March, 1896, the transactions have not been large, only £3,365 of deposits having been received during the year. This subject is fully dealt with in Part III.

Aid to Public Works and Land Settlement.

"The Aid to Public Works and Land Settlement Act, 1896," empowers the Colonial Treasurer to raise £1,000,000 for purposes previously described on page 158.

Public Debt.

The gross public debt of the colony on 31st March, 1896, was £43,050,780. A detailed statement of particulars relative to the various loans is supplied.

The increase for the year 1895–96 was £2,663,816 on the amount at the close of the preceding year. The inclusion of the million and a half 3-per-cent. loan for Government Advances to Settlers, and the half-million of 3½-per-cent. inscribed stock issued in exchange for Bank of New Zealand preferred shares, has considerably enlarged the public debt; but it should be remembered that in the case of the half-million of 3½-per-cent. stock, the Bank of New Zealand has to pay over an equivalent amount of interest in respect of their "preferred shares," held by the colony; and, as regards the million-and-a-half loan, the interest paid by borrowers more than recoups the 3 per cent. for which the colony is liable. Moreover, at the end of thirty-six years the annual instalments paid by borrowers will have amounted to the full sum of the debt incurred, with interest.

The Public Debt of New Zealand on 31st March, 1896.

—	Amount outstanding.		Due Date.	Sinking Funds accrued.	Net Indebtedness.	Annual Charge. Rate. Int.	Rate. S.F.	Amount.	When payable.
	£	£		£	£	%	%	£	
New Zealand Loan Act, 1863	..	275,200	15 July, 1914	104,733	170,467	5	1	16,512	15 Jan. and 15 July
Consolidated Loan Act, 1867..	..	621,300	Ann. drawing	..	621,300	5	..	31,065	Quarterly, 15 Jan., &c.
Immigration and Public Works Loan Act, 1870	..	1,000,000*	1 June, 1907	442,910†	557,090	4	2·4	64,000	1 June and 1 Dec.
Auckland Loan Act, 1863 ..	..	16,800	1 June, 1896	31,405	*Cr.* 14,605	6	‡	1,008	1 April „ 1 Oct.
Lyttelton and Christchurch Railway Loan, 1860	..	9,200	1 Jan., 1897	13,050	*Cr.* 3,850	6	‡	552	30 June „ 31 Dec.
Canterbury Loan Ordinance, 1862	..	16,000	Various§ ..	9,159	6,841	6	1	1,120	30 June „ 31 Dec.
Otago Loan Ordinance, 1862..	..	73,800	1 July, 1898	92,375	*Cr.* 18,575	6	1	5,166	1 Jan. „ 1 July.
Consolidated Loan Act, 1867..	..	13,000	15 April, 1913	..	13,000	4	..	520	15 April „ 15 Oct.
Immigration and Public Works Loan Act, 1870	372,100	400,000	15 April, 1913	..	372,100	4	..	14,884	15 April „ 15 Oct.
	27,900		15 April, 1913	..	27,900	4½	..	1,256	15 April „ 15 Oct.
Defence and Other Purposes Loan Act, 1870	25,000	100,000	1 July, 1910	..	25,000	4½	..	1,125	30 June „ 31 Dec.
	75,000		15 April, 1915	..	75,000	4	..	3,000	15 April „ 15 Oct.
General Purposes Loan Act, 1873	18,500	85,500	15 Oct., 1913	..	18,500	4	..	740	15 April „ 15 Oct.
	12,300		15 May, 1914	..	12,300	4	..	492	15 May „ 15 Nov.
	54,700		28 Nov., 1914	..	54,700	5	..	2,735	15 May „ 15 Nov.
District Railways Purchasing Acts, 1885–86	35,000	223,600	1 Oct., 1896	..	223,600	6¼	..	2,187	1 April „ 1 Oct.
	40,000		1 July, 1909	..		6	..	2,400	
	101,600		1 April, 1905	..		4	..	4,064	
	47,000		1 April, 1899	..		5	..	2,350	
Carried forward ..	..	2,834,400	..	693,632	2,140,768	..	..	155,176	

* Only £200,000 has actually been issued to the public; the unsold debentures are available for the purpose of obtaining temporary advances from time to time. † Sinking Fund payable 13th March and 13th September. ‡ Further contributions of Sinking Fund not required.
§ £3,800 due 2nd January, 1915; £12,200 due 2nd July, 1916: £16,000.

THE PUBLIC DEBT OF NEW ZEALAND ON 31ST MARCH, 1896.—*continued.*

—	Amount outstanding.		Due Date.	Sinking Funds accrued.	Net Indebtedness.	Annual Charge.			
						Rate.		Amount.	When payable.
						Int.	S.F.		
	£	£		£	£	%	%	£	
Brought forward ..	..	2,834,400	..	693,632	2,140,768	..	..	155,176	
Government Loans to Local Bodies Act, 1886	..	48,000	31 Dec., 1900	..	48,000	3½	1½	16,085*	1 Mar. and 1 Sept.
Consolidated Stock Act, 1877	..	29,150,302	1 Nov., 1929	..	29,150,302	4	..	1,166,013	1 May „ 1 Nov.
	..	6,130,896	1 Jan., 1940	..	6,130,896	3½	..	214,581	1 Jan. „ 1 July.
	..	1,500,000	1 April, 1945	..	1,500,000	3	..	45,000	1 April „ 1 Oct.
Consolidated Stock Act, 1884 (Colonial Issue) ..	286,000	2,373,600	28 May, 1897	..	1,632,100	4½	..	73,444	28 May „ 28 Nov.
	40,000		22 May, 1898						
	1,306,100		28 May, 1898						
	253,200		28 May, 1898	..	253,200	4	..	10,128	28 May „ 28 Nov.
	488,300		28 May, 1898	85,259†	403,041	3½	..	17,091	28 May „ 28 Nov.
Naval and Military Settlers' and Volunteers' Land Act, 1892	..	27,226	31 Oct., 1899	..	27,226	4½	..	1,225	30 April „ 31 Oct.
Native Land Purchases Act, 1892	140,000	149,700	31 Oct., 1899	..	140,000	4½	..	6,300	30 April „ 31 Oct.
	9,700		31 Oct., 1899	..	9,700	5	..	485	30 April „ 31 Oct.
Land for Settlements Act, 1892	8,690	53,966	31 Mar., 1897	..	53,966	4½	..	2,428	30 April „ 31 Oct.
	45,276		31 Oct., 1899						
Land for Settlements Act, 1894	134,100	173,300	31 Oct., 1899	..	134,100	4	..	5,364	30 April „ 31 Oct.
	24,200		30 April, 1926	..	24,200	4	..	968	30 April „ 31 Oct.
	15,000		31 Oct., 1899	..	15,000	3½	..	525	30 April „ 31 Oct.
Lands Improvement and Native Lands Acquisition Act, 1894	383,000	448,000	30 Sept., 1908	..	383,000	4	..	15,320	31 Mar. „ 30 Sept.
	65,000				65,000	3½	..	2,275	31 Mar. „ 30 Sept.
New Zealand Consols Act, 1894	..	161,390	1 Feb., 1910	..	161,390	3½	..	5,649	1 Feb. „ 1 Aug.
Totals	..	43,050,780	..	778,891	42,271,889	..	..	1,738,057	

Treasury bills amounting to £735,000 are not included.

* Sinking Fund payable on £960,300; the Land Assurance Fund is also charged with ½ per cent. as a contribution towards Sinking Fund.

† Represents the accrued Sinking Fund upon £960,300, the amount borrowed under "The Government Loans to Local Bodies Act, 1886," to the 31st March, 1896, of which £912,300 has been converted into Consolidated Stock debentures.

Apart from the increase caused by the issue of the million-and-a-half and the half-million loans, the large sum of £536,065 returns interest in excess of the annual charge—viz., £105,500 for Government Loans to Local Bodies; £264,000, Lands Improvement and Native Lands Acquisition; £163,200, Lands for Settlement; and £3,365, New Zealand Consols.

Of the total amount of outstanding public debt at the end of March, 1896—viz., £43,050,780—more than thirty-one millions sterling bore interest at the rate of 4 per cent., and nearly seven millions sterling at 3½ per cent. The following are the rates of interest payable on the complete public debt:—

Rates of Interest.	Amount at each Rate. £
6½ per cent.	35,000
6 per cent.	155,800
5 per cent.	1,007,900
4½ per cent.	1,906,192
4 per cent.	31,537,302
3½ per cent.	6,908,586
3 per cent.	1,500,000
Total	£43,050,780

The total amount of interest payable to the bondholders on the full amount of the public debt, as quoted above, is £1,696,002, which gives an average rate of £3 18s. 9½d. per cent.

The actual payments during each year from 1890 for interest and sinking fund are shown hereunder:—

Year ended 31st March.	Amounts actually paid for Interest and Sinking Fund.				
	Public Debt.			Treasury Bills.	Total.
	Interest.	Sinking Funds.	Totals.	Interest.	
	£	£	£	£	£
1890 ..	1,752,020	115,781	1,867,801	29,801	1,897,602
1891 ..	1,718,618	112,540	1,831,158	27,094	1,858,252
1892 ..	1,747,376	107,469	1,854,845	38,084	1,892,929
1893 ..	1,662,029	117,535	1,779,564	41,564	1,821,128
1894 ..	1,711,583	123,703	1,835,286	50,410	1,885,696
1995 ..	1,619,925	57,979	1,677,904	38,985	1,716,889
1896 ..	1,602,933	41,183	1,644,116	39,659	1,683,775

The securities in which the sinking funds were held are specified in the statement following:—

STATEMENT of the SECURITIES in which the SINKING FUNDS of the several LOANS were invested on the 31st March, 1896.

Investments in—	£	s.	d.
New Zealand 5-per-cent. Debentures	48,250	0	0
" 4½-per-cent. Debentures	43,591	0	0
" 4-per-cent. Debentures	4,585	0	0
" 4-per-cent. Inscribed Stock	104,733	0	9
Treasury Bills, 3¾-per-cent.	52,072	0	0
County of Tauranga 5-per-cent. Debentures ..	1,460	0	0
County of Waitemata 6-per-cent. Debentures ..	580	0	0
City of Dunedin Mortgage 7-per-cent. Debentures ..	3,300	0	0
Borough of Brunner 6-per-cent. Debentures ..	970	0	0
Borough of Hawera 6-per-cent. Debentures ..	4,085	0	0
Borough of Hokitika 6 per-cent. Debentures ..	2,080	0	0
Borough of Palmerston North 5-per-cent. Debentures	1,100	0	0
Borough of Patea 6-per-cent. Debentures	5,000	0	0
Borough of Thames 5½-per-cent. Debentures ..	2,200	0	0
Borough of Tauranga 5-per-cent. Debentures ..	2,600	0	0
Westport Harbour Board 5-per-cent. Debentures ..	7,650	0	0
Wellington and Manawatu Railway Company 5-per-cent. Debentures	17,455	0	0
Waimakariri-Ashley Water-supply 5-per-cent. Debentures	990	0	0
Canada 3-per-cent. Stock	28,936	19	1
Canada 3½-per-cent. Stock	34,022	11	8
Canada 4-per-cent. Stock	60,000	0	0
Canada 4-per-cent. Debentures	18,200	0	0
New South Wales 3-per-cent. Stock	12,052	13	7
New South Wales 3½-per-cent. Stock	83,393	15	8
New South Wales 4-per-cent. Stock	5,486	6	7
New South Wales 4-per-cent. Debentures	20,800	0	0
South Australia 3½-per-cent. Stock	37,216	16	0
South Australia 4-per-cent. Stock..	3,078	4	3
South Australia 4-per-cent. Debentures	24,700	0	0
Victoria 3½-per-cent. Stock	51,157	5	1
Victoria 4-per-cent. Stock	40,865	6	4
Victoria 4-per-cent. Debentures	23,000	0	0
Mortgages	32,700	0	0
	£778,310	19	0
Cash balance on 31st March, 1896 ..	580	15	7
Total..	£778,891	14	7

The total increase of bonds and inscribed stock during the year was £2,711,971. On the other hand, debentures amounting to £48,155 were redeemed or written off, leaving, as stated before, a net increase to the public debt of £2,663,816.

Details of the increase in the public debt are shown hereunder:—

	£	£		£	£
Gross debt, 31st March, 1895		40,386,964	Debentures redeemed—		
Debentures issued for—			Consolidated Stock Act, 1884	29,100	
Advances to settlers ...	1,500,000		Lyttelton and Christchurch Railway Loan Ordinance, 1860 ...	18,600	
Bank of New Zealand preferred shares ...	500,000		Consolidated Loan Act, 1867	144	
Loans to local bodies ...	105,500				47,844
Land improvement and purchase of Native lands	264,000		Debentures written off—		
Purchase of land for settlement	163,200		Ordinance of Legislative Council, 1847	...	311
Sinking-fund accretions	145,400		Gross debt on 31st March, 1896		43,050,780
		2,678,100			
Inscription—					
New Zealand Consols ...	...	3,365			
Conversion operations...	...	30,506			
		£43,098,935			£43,098,935

The net public debt, after deducting the accrued sinking fund (£778,891), was on 31st March, 1896, £42,271,889, an increase of £2,636,857 during the year. Owing to the issue of the million-and-a-half and the half-million loans before alluded to, the net indebtedness per head of population for 1895–96 is greater than in any year since 1890.

In March, 1890, the net indebtedness per head was £60 5s. 3d.; in 1891, £59 11s. 10d.; in 1892, £59 2s.; in 1893, £58 2s. 7d.; in 1894, £57 8s. 10d.; in 1895, £57 9s. 9d.; and in 1896, £60 2s. 4d.

Years ended 31st March.	Amount of Debentures and Stock in Circulation.	Gross Indebtedness per Head of European Population.	Amount of Sinking Fund accrued.	Net Indebtedness.	Net Indebtedness per Head of European Population.
	£	£ s. d.	£	£	£ s. d.
1890	38,667,950	62 10 1	1,386,185	37,281,765	60 5 3
1891	38,830,350	61 19 4	1,487,042	37,343,308	59 11 10
1892	38,713,068	60 14 8	1,037,862	37,675,206	59 2 0
1893	39,257,840	59 16 7	1,113,770	38,144,070	58 2 7
1894	39,826,415	58 17 0	951,924	38,874,491	57 8 10
1895	40,386,964	58 11 6	751,932	39,635,032	57 9 9
1896	43,050,780	61 4 5	778,891	42,271,889	60 2 4

The debt of the colony as above stated does not include the unpaid loans raised by the several local bodies, amounting at the end of March, 1895, to £6,685,510, of which sum £5,423,550 were raised outside the colony. These will be referred to in dealing with the finance of local bodies.

Of the existing loans some portions were raised by the several Provincial Governments, while others represent loans raised for the purpose of paying off provincial liabilities. It is now almost impossible to ascertain the exact expenditure by these Governments on public works, or the allocation of the proceeds of the loans raised by them.

The following shows the debt of each of the Australasian Colonies :—

Colony.	Amount of Debt.	Accrued Sinking Fund.	Net Indebtedness.	Rate of Net Indebtedness per Head of Population at End of Year.
	£	£	£	£ s. d.
Queensland (Dec., 1895)	31,873,934	..	31,873,934	69 4 2
New South Wales (30 June, 1896) ..	62,411,373	..	62,411,373	48 7 10
Victoria (Dec., 1895)..	46,828,517	..	46,828,517	39 12 6
South Australia (Dec., 1895)	23,414,250	195,316	23,218,934	65 16 10
Western Australia (June, 1894) ..	3,417,339	138,531	3,278,808	39 19 0
Tasmania (Dec., 1895)	8,180,925	122,464	8,058,461	50 2 1
New Zealand (March, 1896)	43,050,780	778,891	42,271,889	60 2 4

The amount of net indebtedness per head of population was thus greater in Queensland and South Australia than in New Zealand.

The burden of a public debt depends greatly on the measure in which it is expended on reproductive works, and on the degree of prosperity enjoyed by the people. The generally rugged character of this country, and the natural difficulties appertaining to the sites of many of the towns, soon necessitated a large outlay on roads and public works. The need was fully recognised, and to some extent met, by the Provincial Governments, which have justly received great credit for their far-seeing and liberal exertions. A great deal of road-making, often of a very costly character, was accomplished, harbour and other improvements begun, and immigration encouraged. Some railways were made in Canterbury, Otago, and Southland. The City of Christchurch and the Canterbury Plains were connected with the Port of Lyttelton by a railway, which required the construction of a long and very costly tunnel through the intervening range of hills. In Otago, private enterprise, backed by the guarantee of the Provincial Government, built a railway from Dunedin to Port Chalmers, and some miles of line were made in Southland from the town of Invercargill into the interior; but no general and comprehensive scheme of public works could be carried out by the separate exertions of the Provincial Governments. In 1870, therefore, the General Government brought forward its public-works and immigration policy, by which it was proposed to raise a loan of ten millions for the construction of main trunk railways, roads, and other public works of importance to the colony as a whole, as well as for the promotion of immigration on a large scale, the expenditure to be spread over a period of ten years. This policy was accepted by the Legislature, and embodied in "The Immigration and Public Works Act, 1870."

The demands for local railways and other works soon caused the original proposals to be exceeded, and entailed an expenditure at a much more rapid rate and to a far greater amount than was

originally contemplated. Although many of the works undertaken have been directly unremunerative, yet the effect of the policy, as a whole, has been largely to develop the settlement of the country, and enormously to increase the value of landed property; land, in parts which before the construction of railways was valued at from £1 to £2 per acre, having been subsequently sold at prices varying from £10 to £20 per acre. Moreover, the railway and telegraph-lines yield a revenue which covers a large portion of the interest on their cost after paying working-expenses.

The following may be stated as approximately representing the loan expenditure by the General Government on certain public works to the 31st March, 1896:—

	£
Telegraphs	734,560
Development of goldfields	587,651
Immigration	2,146,644
Roads and bridges	3,982,728*
Land-purchases	1,297,854†
Lighthouses, harbours, and defence works	917,513
Public buildings, including schools	2,021,429
Coal-mines and thermal springs	25,435
Railways (by the Provincial and General Governments)	16,203,958‡

The above several items of expenditure give a total of £27,917,772. To this must be added so much of the loans raised by the various local bodies as has been devoted to the construction of harbours, roads, and other public works, together with the amounts expended out of loan by the Provincial Governments on immigration, and public works other than railways. The expenditure on directly reproductive works—railways, telegraphs, and waterworks on goldfields—has been £17,526,169. Expenditure on land is also partly reproductive, and that on immigration, roads, bridges, and lighthouses indirectly so.

The expenditure on railway works has been kept within very narrow limits during the last few years. The railway expenditure during each of the five-yearly periods since the initiation of the public-works policy has been as follows:—

	£
1st July, 1870, to 30th June, 1875	3,575,362
1st July, 1875, to 31st March, 1880	4,919,712
1st April, 1880, to 31st March, 1885	3,120,680
1st April, 1885, to 31st March, 1890	2,308,319
1st April, 1890, to 31st March, 1895	978,498
And for the year ended 31st March last	197,105
Total	15,099,676

* Not including £146,844 spent under Government Loans to Local Bodies Act Amendment Act, 1891, and £232,968 under Lands Improvement, &c., Act, 1894.

† Not including moneys spent in purchase of Cheviot Estate, £250,000, under Native Land Purchase Acts, £373,311, and under Land for Settlements Act, £230,121.

‡ Including £1,104,281 spent on railways by Provincial Governments, of which sum £92,259 was paid for the Dunedin and Port Chalmers line.

This great diminution in expenditure has necessarily involved proceeding with the railways at a very much slower rate, and New Zealand's expenditure on railways is now the lowest per head of the population of any of the Australasian Colonies. The following table shows the cost of railway-works, the mileage, the average cost per mile, the population, and the cost per head of the population in the several colonies referred to:—

Colonies.	Cost of Railway-works.	Mileage.	Average Cost per Mile.	Population	Cost per Head of Population	Year ending
	£		£		£ s. d.	
South Australia	13,665,945	1,867	7,320	348,539	39 4 2	30th June, 1895.
Queensland ..	16,522,293	2,379	6,945	454,234	36 7 6	30th June, 1895.
Victoria ..	37,922,207	3,103	12,221	1,179,103	32 3 2	30th June, 1895.
New South Wales	36,611,366	2,531	14,464	1,268,150	28 17 5	30th June, 1895.
Western Australia	2,092,372	573	3,652	89,550	23 7 3	30th June, 1895.
Tasmania ..	3,518,595	420	8,378	157,456	22 6 11	31st Dec., 1894.
New Zealand ..	15,425,532	2,014	7,659	703,187	21 18 9	31st Mar., 1896.

Co-operative Public Works.

Remarks on the co-operative system of constructing public works were given in a special article in the Year-book of 1894. The numbers of workmen employed in this manner under Government departments during the first eight months of the year 1896 were:—

	Public Works Department.	Survey Department.	State Farm, Levin.	Total.
January	804	1,746	26	2,576
February	775	1,328	25	2,128
March	765	1,467	27	2,259
April	826	1,355	30	2,211
May	802	1,452	29	2,283
June	919	1,464	23	2,406
July	850	1,415	28	2,293
August	847	1,418	26	2,291

The co-operative system has now been in operation for five years. During the five years ended the 31st March last, the total expenditure on co-operative works amounted to £929,962—viz., £528,785 by the Public Works Department, and £401,177 by the Lands Department; and of the total sum, no less than £610,941 was paid direct to the workmen as the value of their labour.

The length of railway constructed or partially constructed under the system was 172 miles; also 1,180 miles of roads, besides various public buildings.

The average number of men employed in each year has been as follows:—

Year.	Lands Department.	Public Works Department.	Total.
1891–92	261	527	788
1892–93	280	842	1,122
1893–94	933	1,015	1,948
1894–95	1,103	962	2,065
1895–96	1,572	764	2,336
Gross Totals	4,149	4,110	8,259
Average ..	830	822	1,652

The earnings of the men vary, on account partly of their different degrees of capacity as workmen, and partly of the different climatic and other conditions under which they have worked. The average earnings per day in the different callings have been as follows:—

	s.	d.		s.	d.
Navvies	7	2	Carpenters (on railways) ..	8	8
Concreters	7	2	Tunnel-men	9	10
Fencers	7	5	Slaters	10	4
Bushmen	7	7	Masons	10	8
Labourers	7	8	Bricklayers	10	8
Platelayers and ballasters ..	7	10	Plumbers	10	10
Carpenters (on buildings) ..	8	1	Plasterers	12	0
Painters	8	3			

Private Wealth.

The number and value of estates of deceased persons finally certified on which duty was paid during the years 1893, 1894, and 1895 are shown classified according to amount:—

Value of Estates.	1893.		1894.		1895.	
	Number of Estates.	Aggregate Value on which Duty was Paid.	Number of Estates.	Aggregate Value on which Duty was Paid.	Number of Estates.	Aggregate Value on which Duty was Paid.
£ £		£		£		£
100 to 500 ..	255	67,036	310	78,551	392	89,092
500 „ 1,000 ..	108	74,900	123	89,564	134	97,210
1,000 „ 2,000 ..	66	93,592	78	108,413	107	150,151
2,000 „ 3,000 ..	39	96,301	25	60,403	37	90,950
3,000 „ 4,000 ..	14	48,016	15	53,044	27	92,868
4,000 „ 5,000 ..	8	34,857	15	66,367	18	79,387
5,000 „ 7,500 ..	15	94,839	13	76,803	18	113,204
7,500 „ 10,000 ..	11	97,288	8	68,747	11	91,756
10,000 „ 15,000 ..	14	167,355	5	60,799	6	76,463
15,000 „ 20,000 ..	9	155,810	7	115,636	5	88,234
20,000 and over ..	5	601,786	10	442,138	12	594,991
Totals ..	544	1,531,780	609	1,220,465	767	1,564,306

On these data it is possible to compute roughly the total value of private property in the colony. Dividing the aggregate amount admitted to probate during a series of years by the number of *deaths* occurring within the same period, the average value of

property left by each person dying is obtained. On the assumption that the average wealth of each person living is equal to that left by each person dying, the total aggregate private wealth may readily be found by multiplying the average amount left at death by the number of persons living. It is necessary for this calculation to take the average results for a series of years, as any inference drawn from the figures of a single year would be untrustworthy. For an increase in the death-rate must necessarily give a corresponding decrease in the estimated wealth, unless the number of estates admitted to probate maintains year by year the same ratio to the number of deaths. An epidemic among young children who have no property to leave would unduly lower the average; while, on the other hand, the deaths of a few wealthy persons would raise it unwarrantably. It must also be remembered, when using these figures for comparative purposes, that the lowness of the death-rate in New Zealand is in great measure due to the small mortality among infants. By putting the figures for several years together, and taking the average for the term, we may arrive at fairly correct results, as thus:—

Years, inclusive.	Amount sworn to.	Total Number of Deaths.	Average Amount left by each Person.	Average Number of Persons living.	Average Total Wealth for each Year of the Period.
	£		£ s. d.		£
1891–95	7,337,243	33,525	218 17 2	660,998	144,665,300

It is manifest, however, that this average does not exhibit with sufficient accuracy the actual *present* amount of wealth. If the average amount per head were the same at the end of the year 1895 as for the period 1891–95—viz., £218 17s. 2d.—then the total wealth possessed by the 698,706 persons in the colony on the 31st December of that year would be £152,918,021.

These figures, however, fall short of the full amount of private wealth, as the values sworn to do not include those estates on which no stamp duty is payable—viz., land and goods passing to the husband or wife of the deceased, and properties under £100. The total of these must be considerable, and should give a substantial increase to the average amount per head, and therefore to the total wealth.

The estimated private wealth for each year since 1888 is shown by the following figures:—

Year.	Amount. £	Average per Head. £
1888	131,345,925	216
1889	133,135,134	215
1890	142,631,461	228
1891	145,780,502	230
1892	152,065,087	236
1893	156,058,273	232
1894	154,715,821	225
1895	152,918,021	219

The Government Statistician of New South Wales estimated the private wealth of the seven colonies of Australasia for the year 1890 at £1,169,434,000.

It is interesting to compare this estimate of the wealth of the Australasian Colonies with the results of similar calculations for other parts of the world. A table giving this information for various countries has accordingly been introduced; but, in comparing the wealth of one country with another, it must be remembered that the purchasing-power of money in different parts of the world varies considerably, and without information on this head bare statements of wealth per inhabitant are of very little use, and often misleading. Besides this, the question as to what extent Government undertakes such functions as the construction and working of railways disturbs comparisons of private wealth. The figures are for the most part taken from Mulhall's "Dictionary of Statistics":—

WEALTH OF PRINCIPAL COUNTRIES.

Country.	Private Wealth.	Average Amount per Head of Population.
	£	£
United Kingdom	9,400,000,000	247
France	8,598,000,000	222
Germany	6,457,000,000	133
Russia	5,089,000,000	55
Austria-Hungary	3,855,000,000	96
Italy	2,963,000,000	98
Spain	2,516,000,000	143
Portugal	408,000,000	83
Sweden and Norway	880,000,000	122
Denmark	404,000,000	192
Holland	980,000,000	213
Belgium	1,007,000,000	165
Switzerland	494,000,000	165
United States	12,824,000,000	205
Canada	980,000,000	196

In the year 1885 the property-tax returns gave £40,304,000 as the value of public property in the colony, including Crown lands, educational, municipal, and other reserves, with public works—namely, railways, telegraphs, lighthouses, buildings, harbour-works, and water-supply on goldfields. In 1888 the value of the above had risen to £42,505,000, and it is supposed that in 1895 the sum would probably be about £45,000,000. There are also from nine to ten millions of acres of lands the property of the Maoris. In 1888 the Native lands were valued at £3,000,000 sterling. The present value is probably not so much; some land has been sold, but, on the other hand, some of that retained may have increased in value.

Incomes.

The incomes of the people of New Zealand for 1893 have been the subject of two calculations made on different principles, but yielding similar results.

The first method adopted was to allot a probable income to each description of occupation found in the census of 1891 (the census figures being raised to the population of 1893). Whatever may be thought of the plan of basing a calculation on a series of arbitrary assumptions, it nevertheless has been adopted by eminent statisticians, and no doubt serves as a sort of check on Mr. Mulhall's method.

The result for New Zealand shows an aggregate of between £27,000,000 and £28,000,000,* giving an average income of about £41 per head of population of all ages and both sexes, and £91 per head of breadwinners.

Mr. Mulhall's method may be thus described: Take 90 per cent. of agricultural, pastoral, and mining produce, and 60 per cent. of manufactures; compute transport at 10 per cent. on the gross value of the foregoing products; house-rent according to the nearest estimate; commerce at 10 per cent. on the imports and exports; shipping, 30s. per ton; banking, 5 per cent. on banking power; and allow 10 per cent. on the total of the preceding items to cover the earnings of servants, professional men, Civil Service, &c. The method is said to be one answering fairly well for comparative purposes.

The earnings of the people of New Zealand, calculated in this way, would be:—

Heads of Income.	Amount. £
From agricultural, pastoral, and mining produce ..	12,915,000
„ manufactures	3,181,000
„ transport	1,965,000
„ house-rent	4,500,000
„ commerce and shipping	1,700,000
„ banking	991,000
„ earnings of professional men, Civil Service, servants, &c.	2,525,000
	£27,777,000*

The average earnings per inhabitant in other countries have been calculated on the above method, by Mr. Mulhall, with the following results:—

Country.	Average per Inhabitant. £ s. d.	Country.	Average per Inhabitant. £ s. d.
United Kingdom ..	33 7 0	Norway	20 5 0
France	27 8 0	Denmark	32 5 0
Germany	22 2 0	Holland	22 6 0
Russia	11 5 0	Belgium	28 0 0
Austria	15 5 0	Switzerland ..	19 0 0
Italy	12 2 0	United States ..	39 0 0
Spain	16 5 0	Canada	26 0 0
Portugal	12 1 0	Australia	40 2 0
Sweden	22 0 0	Argentina	24 0 0

* This sum, being the total of *all* the incomes in the colony, much money is necessarily included several times over.

Wages.

Dealing only with persons returned as in receipt of wages or salary, and discarding all who derive their incomes from professional or trade profits, it has been roughly estimated that the aggregate of the wages paid in the colony for the year 1893 was £12,998,546, of which sum £11,983,521 was earned by males, and £1,015,025 by females, the average yearly earnings amounting to £92 12s. for the one sex, and £33 18s. for the other:—

Occupations. (For details of Classes see report on Census, 1891.)	Males.			Females.		
	Estimated Number of Wage-earners, 1893.	Average Annual Earnings	Aggregate Earnings, 1893.	Estimated Number of Wage-earners, 1893.	Average Annual Earnings	Aggregate Earnings, 1893.
		£	£		£	£
I. Professional	7,472	141·5	1,057,452	4,046	49·7	200,945
II. Domestic ..	3,536	84·1	297,394	16,718	32·1	536,641
III. Commercial	29,444	121·9	3,590,876	1,179	23·8	28,016
IV. Industrial..	48,556	80·0	3,886,058	7,751	31·7	245,535
V. Agricultural, pastoral, mineral, &c.	39,470	77·7	3,068,948	121	17·6	2,126
VI. Indefinite..	961	86·2	82,793	114	15·5	1,762
Totals..	129,439	92·6	11,983,521	29,929	33·9	1,015,025

Total wages, males	£11,983,521
„ females	1,015,025
Total	£12,998,546*

Cost of Living.

An estimate made in 1894 of the cost of living in New Zealand showed a total expenditure of £23,349,623. This sum included, besides what was spent on necessaries—food, drink, clothing, fuel, light, rent, and furniture—the additional outlay on luxuries, *e.g.*, books, pictures, amusements, &c., and on things of occasional necessity, such as stimulants, medical comforts, personal attendance, and the like. The rate arrived at per head of population was £35 6s. 1d.

Mr. Mulhall, in his "Dictionary of Statistics," gives the average expenditure per head of population for various countries as follows:—

* Here again the total, being the sum of all wages paid in the colony, must be understood as a gross amount, including much money counted several times over.

Country.	Average Expenditure per Head. £ s. d.	Country.	Average Expenditure per Head. £ s. d.
United Kingdom ..	29 14 9	Norway	19 0 0
France	23 19 4	Denmark	28 11 5
Germany	20 3 4	Holland	20 17 4
Russia	10 1 11	Belgium	25 8 2
Austria	14 4 9	Switzerland ..	18 0 0
Italy	11 11 0	United States ..	32 16 2
Spain	15 12 6	Canada	23 6 2
Portugal	11 5 6	Australia	33 10 3
Sweden	20 8 4	Argentina	27 9 1

Mr. Coghlan's estimate for Australasia is as high as £42 1s. 3d. per head.

Below are shown the quantities used per head of population in New Zealand of some of the main articles of consumption. The figures are averages for five years :—

Articles.	Average Consumption.	Per Inhabitant.
Food, Drinks, and Stimulants.		
Wheat	bush.	6·71
Potatoes	lb.	470·00
Beef	lb.	107·20
Mutton	lb.	126·00
Butter	lb.	17·10
Cheese	lb.	4·40
Milk	gal.	22·50
Cocoa and chocolate	lb.	0·43
Coffee and chicory	lb.	0·46
Tea	lb.	5·88
Sugar	lb.	81·76
Rice	lb.	8·39
Fruits, dried (imported)	lb.	6·72
Fruits, fresh (imported)	lb.	22·06
Mustard	lb.	0·28
Pickles	doz. pts.	0·02
Sauces	doz. pts.	0·02
Spices and pepper	lb.	0·53
Salt	lb.	33·98
Vinegar	gal.	0·12
Tobacco, snuff, cigars	lb.	1·99
Spirits	gal.	0·69
Wine	gal.	0·16
Beer	gal.	7·69
Other Articles.		
Kerosene	gal.	2·19
Soap (imported)	lb.	0·55
Soap, New Zealand	lb.	14·58
Candles (imported)	lb.	2·54
Candles, New Zealand	lb.	2·66
Matches	gross	0·17
Soda, carbonate	lb.	0·19
Soda, crystals	lb.	0·73
Coal	tons	1·11

Prices and Wages.

The average prices of produce, live-stock, provisions, &c., in each provincial district are given for the year 1895 in tabular form on pages 178 and 179. While the variations for the different districts are such as to render it in most cases inadvisable to show averages for the colony, this has nevertheless been done for the staples of food, *i.e.*, bread, meat, and milk, also for tea and sugar, which may almost be called necessaries. Averages for the colony, taken out for the years 1864, 1874, 1884, and 1894, indicate a decline in prices with the advance of time. In striking these, prices on the goldfields have not been taken into account:—

—		1864.	1874.	1884.	1894.
		s. d.	s. d.	s. d.	s. d.
Bread	per lb.	0 3½	0 2	0 1¾	0 1½
Beef	per b..	0 8¼	0 5	0 5	0 4¼
Mutton	per lb.	0 8¼	0 4	0 3½	0 3¼
Sugar	per lb.	0 6	0 5	0 4½	0 3
Tea	per lb.	3 0¾	2 9½	2 7½	2 2
Butter (fresh) ..	per lb.	1 11½	1 3	0 11	0 9¾
Cheese (colonial) ..	per lb.	1 4	0 9¾	0 9	0 6
Milk	per quart.	0 6¾	0 5	0 4¼	0 3½

Rates of Wages.

The average rates of wages paid in 1895 in each provincial district for agricultural, pastoral, artisan, and servants' labour are given on pages 180 to 183.

An average for the colony, calculated for the years 1874, 1884, and 1894, would seem to show that wages for general labour and artisan's work have somewhat fallen during the period specified. But the average for artisans is hard to calculate, because rates vary for different kinds of skilled work, in which the number of persons employed vary also; or, otherwise expressed: (*a*) different trades command different rates; (*b*) all persons employed in the same trade do not receive the same wage; and (*c*) the number employed in one trade differs from the number employed in another.

—		1874.	1884.	1894.
		s. d.	s. d.	s. d.
General labourers ..	per day	7 0	7 0	6 6
Artisans—				
Bricklayers.. ..	„	11 6	11 3	9 6
Carpenters	„	10 9	9 6	8 3
Masons	„	12 0	11 3	9 6
Painters	„	No information	9 6	8 3
Plumbers	„		10 9	8 6
Smiths	„	10 9	10 0	8 6

AVERAGE PRICES OF PRODUCE, LIVE-STOCK, PROVISIONS, ETC., IN EACH PROVINCIAL DISTRICT OF NEW ZEALAND DURING THE YEAR 1895.

Produce, &c.	Auckland.	Taranaki.	Hawke's Bay.	Wellington.	Marlborough.	Nelson.	Westland (Goldfield).	Canterbury.	Otago (Part Goldfield)
I. AGRICULTURAL PRODUCE.									
Wheat .. .. per bushel (60lb.)	4/6	3/6 to 4/6	4/3	4/ to 5/	4/	4/	4/6	4/	3/9 to 5/
Barley .. .. per bushel (50lb.)	2/10	2/7 to 3/	3/	3/ to 3/9	3/3	3/	3/6	2/6 to 3/	3/2 to 6/
Oats .. .. per bushel (40lb.)	3/	2/6 to 3/	3/6	2/6 to 3/	2/6	2/3	2/6	2/1	2/1 to 4/
Maize .. .. per bushel (56lb.)	3/3	3/ to 3/3	3/3	3/ to 4/	..	4/	4/	2/6	2/10 to 3/6
Bran .. .. per bushel (20lb.)	10d.	9d. to 1/	1/3	9d. to 1/6	..	1/3	11d.	£3/10 ℔ ton	9d. to 1/3
Hay .. .. per ton ..	£4/15	£2/10 to £4	£3 10/	50/ to 90/	£3	£4	£5	£3	50/ to 130/
II. FLOUR AND BREAD.									
Flour, wholesale .. per ton of 2,000lb.	£10/10	£9 to £11	£11	£10–£11/10	£12	£10/10	£10 10/	£9 10/	£10 to £11
Flour, retail .. per bag of 50lb. ..	5/6	6/ to 8/	6/	5/9 to 6/6	6/6	6/	5/6	4/10	5/6 to 6/6
Bread .. .. per 4lb. loaf ..	6d.	6d.	6d.	6d. to 7d.	8d.	7d.	6d.	5d.	5d. to 7d.
III. LIVE-STOCK AND MEAT.									
Horses, draught .. per head ..	£15 to £40	£12 to £18	£12 to £20	£15 to £30	£20	£20	£20	£18 to £22	£14 to £25
Horses, saddle and harness .. per head ..	£5 to £20	£7 to £8	£10 to £14	£5 to £25	£14	£14	£12	£7 to £12	£8 to £15
Cattle, fat .. per head ..	£8	£4/10–£6/5	£6 10/	£6 to £8	£7	£5	£8 10/	£5 to £8	£7 to £9 10/
Cattle, milch cows .. per head ..	£6	£4 to £5	£7 10/	£3 to £8	£6	£6	£7	£4 to £6	£4 to £5
Sheep, fat.. .. per head ..	12/	9/ to 11/	10/6	7/ to 10/	7/	8/	15/	10/ to 15/	12/
Lambs, fat .. per head ..	11/	6/6 to 7/	8/6	4/ to 8/	6/	8/	12/	9/ to 12/	9/
Butchers' meat:									
Beef .. .. per lb.	5d.	1d. to 5d.	4½d.	3d. to 4½d.	5d.	3d.	4½d.	3d. to 5d.	4d. to 5d.
Mutton .. .. per lb.	3d.	1d. to 4d.	4d.	3d. to 4d.	2d.	3d.	4½d.	1½d. to 4d.	2½d. to 4d.
Veal .. .. per lb.	4d.	1d. to 5d.	5d.	4d. to 6d.	5d.	4d.	4½d.	4d.	2d. to 6d.
Pork .. .. per lb.	5d.	2d. to 6d.	4d.	4d. to 7d.	5d.	5d.	4½d.	4d. to 6d.	4½d. to 7d.
Lamb .. .. per lb.	5d.	4d. to 6d.	5d.	3½d. to 5d.	4d.	4d.	4½d.	6d.	3d. to 6d.
IV. DAIRY PRODUCE.									
Butter, fresh .. per lb.	10d.	8d.	1/	6d. to 9d.	6d.	10d.	1/	6d. to 8d.	7d. to 1/
Butter, salt .. per lb.	6d. to 7d.	6d. to 7d.	8d.	6d. to 7d.	6d.	7d.	1/	6d.	6½d. to 1/
Cheese, colonial .. per lb.	6d.	5d. to 6d.	6d.	4½d. to 8d.	7d.	6d.	7d.	4½d.	4d. to 8d.
Cheese, imported .. per lb.	1/4	..	8d.	9d. to 1/6	..	10d.	1/6	9d.	1/ to 1/6
Milk .. .. per quart ..	3d.	3d. to 4d.	3d.	2d. to 3d.	6d.	4d.	5d.	3d.	2d. to 4d.

AVERAGE PRICES OF PRODUCE, LIVE-STOCK, PROVISIONS, ETC., IN EACH PROVINCIAL DISTRICT OF NEW ZEALAND DURING THE YEAR 1895—continued.

Produce, &c.	Auckland.	Taranaki.	Hawke's Bay.	Wellington.	Marlborough.	Nelson.	Westland (Goldfield).	Canterbury.	Otago (Part Goldfield).
V. FARM-YARD PRODUCE.									
Geese .. .. per pair ..	6/	5/ to 5/6	5/	5/ to 7/6	5/	4/	7/	4/ to 6/	6/ to 7/
Ducks .. .. per pair ..	4/	4/3 to 4/6	3/6	3/ to 5/	2/6	3/6	5/	3/ to 4/	3/6 to 5/
Fowls .. .. per pair ..	3/6	3/	3/	2/9 to 3/6	2/	3/6	3/6	1/6 to 4/	2/6 to 4/
Turkeys .. .. per head ..	6/	3/ to 3/6	6/	3/6 to 7/6	7/	4/	7/6	7/	4/ to 8/
Bacon .. .. per lb. ..	7d.	4½d. to 8d.	7d.	5½d. to 8d.	7d.	6½d.	7d.	6d.	5½d. to 9d.
Ham .. .. per lb. ..	10d.	6d. to 10d.	10d.	7d. to 10d.	8½d.	7½d.	9d.	7d.	7d. to 10d.
Eggs .. .. per doz. ..	10d.	6d. to 10d.	1/	8d. to 1/3	6d.	9d.	1/	8d.	9d. to 1/3
VI. GARDEN PRODUCE.									
Potatoes, wholesale .. per ton ..	£4	£2 10/-3 10/	£3 10/	£3 to £5	£3 10/	£4	£5	£2	£5 to £7
Potatoes, retail .. per cwt. ..	4/6	3/ to 4/6	4/	4/6 to 5/6	4/	6/	8/	2/6	6/9 to 8/
Onions .. .. per lb. ..	1½d.	1d. to 3d.	3d.	1d. to 2d.	1d.	¾d.	2d.	1d.	1d. to 2d.
Carrots .. .. per doz. bnchs.	1/	1/	2/	10d. to 2/	6d.	2/	3/	10d.	8d. to 1/6
Turnips .. .. per doz. bnchs.	1/	1/	2/	9d. to 1/6	6d.	2/	3/	10d.	8d. to 1/6
Cabbages .. .. per doz. ..	1/6	1/	2/	1/ to 3/	1/	1/6	3/	1/	8d. to 2/6
VII. MISCELLANEOUS ARTICLES.									
Tea .. .. .. per lb. ..	1/10	2/4 to 2/6	2/6	1/6 to 3/	2/ to 3/	2/	2/1	1/6 to 2/8	1/6 to 2/6
Coffee .. .. per lb. ..	1/8	1/6 to 1/10	2/	1/4 to 2/	1/10	1/6	1/9	2/	1/6 to 2/
Sugar .. .. per lb. ..	2½d.	3d.	3d.	2½d. to 3d.	3d.	2¾d.	3d.	3d.	2½d. to 3½d.
Rice .. .. per lb. ..	2¾d.	2d. to 3d.	3d.	2d. to 3d.	3d.	2½d.	3d.	2½d.	2d. to 4d.
Salt .. .. per lb. ..	1d.	1d.	1d.	1d.	1d.	1d.	1½d.	1½d.	¾d. to 2d.
Soap .. .. per cwt. ..	12/ to 21/	12/ to 20/	10/6	9/ to 24/	10/	18/	17/6	16/ to 20/	15/ to 18/
Candles .. .. per lb. ..	8d.	7½d. to 8d.	9d.	6d. to 9d.	10d.	6½d.	8d.	5½d. to 9d.	5¾d. to 9d.
Tobacco .. .. per lb. ..	5/6	5/ to 5/6	5/9	5/ to 6/	6/6	5/6	5/6	4/10 to 6/	5/ to 7/
Coal .. .. per ton ..	25/	28/ to 45/	40/	30/ to 40/	38/	35/	20/	32/6	20/ to 30/
Firewood .. .. per cord ..	35/	16/ to 20/	30/	20/ to 35/	24/	20/	25/	30/	16/ to 32/
VIII. BEER, WINE, SPIRITS.									
Beer, colonial .. per hhd. ..	£4	£4 10/	£4 10/	£4–£4/7/6	£4 13/	£5	£4 10/	£4	£4 to £9
Beer, English, bottled per doz. qts. ..	13/6	16/	14/	13/ to 15/6	16/6	13/6	16/	18/	12/ to 20/
Brandy .. .. per gallon ..	27/	24/ to 30/	33/	26/ to 37/6	25/	26/	25/	27/6	24/ to 27/
Rum .. .. per gallon ..	27/	22/ to 27/	25/	22/ to 26/	24/	22/	23/	26/	21/ to 24/
Whisky .. .. per gallon ..	27/	23/6 to 30/	29/	26/ to 27/6	25/	26/	23/	27/	23/9 to 27/
Gin .. .. per gallon ..	20/	20/ to 21/	25/	20/ to 25/	17/	19/	25/	23/6	19/6 to 25/
Wine, Australian .. per gallon ..	13/6	15/	15/	15/ to 16/6	13/	13/6	13/	9/	11/ to 16/
Wine, European .. per gallon ..	17/	18/ to 22/6	25/	17/ to 32/	15/	22/6	18/	18/	18/ to 21/

AVERAGE RATES OF WAGES IN EACH PROVINCIAL DISTRICT OF NEW ZEALAND DURING THE YEAR 1895.

Description of Labour.	Auckland.	Taranaki.	Hawke's Bay.	Wellington.	Marl-b'rough.	Nelson.	Westland (Goldfield).	Canterbury.	Otago (Part Goldfield)
1. AGRICULTURAL LABOUR.									
Farm-labourers:									
With board, per week	12/ to 15/	15/ to 25/	15/ to 25/	10/ to 25/	20/	20/	20/	15/	15/ to 18/
Without board, per day	5/	6/	8/	4/6 to 8/	6/	..	9/	5/	..
Ploughmen:									
With board, per week	15/ to 17/6	24/ to 35/	25/	15/ to 25/	25/	20/	..	15/ to 17/6	15/ to 20/
Without board, per day	6/	6/	9/	6/ to 7/	7/	..	..	5/	..
Reapers:									
With board, per week	15/ to 20/	30/	25/ to 30/	20/ to 40/	25/	..	..	30/ to 35/	17/6 to 20/
Without board, per day	6/6	7/	8/	7/ to 8/	7/	6/	..	..	..
Mowers:									
With board, per week	15/ to 20/	30/	25/ to 30/	20/ to 40/	25/	..	..	30/ to 35/	20/ to 25/
Without board, per day	6/6	7/	8/	7/ to 8/	7/	6/	..	..	..
Threshers:									
With board, per week	20/ to 25/	30/	25/ to 35/	20/ to 45/	25/	..	..	*	25/
Without board, per day	7/	7/	8/	7/ to 8/	7/	6/	..	..	..
2. PASTORAL LABOUR.									
Shepherds, with board, per annum	£50 to £55	£45 to £60	25/ p. week	£50 to £75	£60	30/ p. wk.	..	£52 to £65	£52 to £60
Stockkeepers, with board, per annum	£50 to £60	£45 to £60	25/ „	£60 to £75	£60	..	25/†	£40 to £52	15/ to 25/†
Hutkeepers, with board, per annum	10/ to 15/†	..	20/ „	£40 to £60	£60	..	..	£40 to £52	15/ to 20/†
Station-labourers:									
With board, per week	10/ to 15/	20/ to 25/	25/	10/ to 25/	20/	20/	..	15/ to 20/	15/ to 19/
Without board, per day	..	6/ to 8/	..	5/ to 6/	..	..	..	..	..
Sheep-washers:									
With board, per week	20/ to 25/	25/	30/	20/ to 30/	25/	..	..	..	15/ to 25/
Without board, per day	..	6/	..	6/ to 7/	..	..	..	16/8 p. 100	10/6 p. 100
Shearers, with board, per 100 sheep shorn	..	20/	17/6	17/6 to 20/	16/	16/8	..	16/8	15/ to 19/
Men-cooks on stations, with board, per week	20/	18/ to 20/	20/ to 25/	15/ to 30/	25/	30/	..	20/ to 25/	20/ to 30/

* 9s. to 10s. per 1,000 bushels. † Per week.

AVERAGE RATES OF WAGES IN EACH PROVINCIAL DISTRICT OF NEW ZEALAND DURING THE YEAR 1895—*continued.*

Description of Labour.	Auckland.	Taranaki.	Hawke's Bay.	Wellington.	Marl-b'rough.	Nelson.	Westland (Goldfield).	Canterbury.	Otago (Part Goldfield).
3. ARTISAN LABOUR (per day, without board).									
Masons	8/	8/*	10/	10/ to 13/	10/	12/	14/	9/	10/ to 12/
Plasterers	8/	8/*	10/	10/ to 12/	10/	12/	13/	9/	11/ to 12/
Bricklayers	8/	8/*	9/	9/ to 12/	10/	12/	13/	8/	11/ to 12/
Carpenters	7/ to 8/	7/ to 8/†	9/	8/ to 10/	8/	8/	12/	8/	8/ to 12/
Smiths	7/	8/	9/	8/ to 10/	8/	9/	12/	9/	8/ to 10/
Wheelwrights	8/	8/	10/	8/ to 12/	8/	8/	11/	10/	7/ to 8/
Shipwrights	8/	..	12/	8/ to 13/	8/	11/	12/	10/	9/ to 12/
Plumbers	7/	10/*	9/	8/ to 10/	9/	8/	10/	9/	10/ to 11/
Painters	7/6	7/*	8/	7/ to 9/4	9/	8/	9/	8/	9/ to 10/
Saddlers	7/	10/	9/	7/ to 12/	8/	8/	8/	8/	8/ to 10/
Shoemakers	6/6	6/ to 8/	8/	6/ to 10/	8/	8/	8/	8/	7/ to 10/
Coopers	6/	7/	9/	8 to 10/	8/	7/	12/	9/	7/ to 8/
Watchmakers	8/	10/	10/	8/6 to 12/	8/	10/	10/	7/ to 10/	9/ to 10/
4. SERVANTS.									
Married couples without family, with board, per annum	£50 to £60	£40 to £60	£60 to £75	£65 to £80	£65	£75	£70	£65 to £70	£65 to £70
Married couples with family, with board, per annum	£40 to £45	£55	£60 to £80	£50 to £80	£60	..	£50	£50 to £60	£50 to £58
Grooms, with board, per week ..	15/ to 20/	15/ to 25/	20/	20/ to 30/	20/	25/	40/	15/ to 25/	15/ to 20/
Gardeners:									
With board, per week	50/ to 20/	25/	25/	20/ to 40/	25/	..	..	20/ to 25/	20/ to 25/
Without board, per day	..	..	..	7/ to 8/	..	10/	10/	5/ to 6/	6/ to 8/
Cooks, with board, per week	20/	25/ to 50/	15/	12/ to 30/	14/	15/	20/	12/ to 15/	15/ to 20/
Laundresses, with board, per week ..	15/ to 20/	15/ to 18/	15/	10/ to 20/	12/	12/6	15/	12/ to 15/	12/ to 15/
General house-servants, with board, per week	10/ to 12/	8/ to 15/	12/	10/ to 15/	10/	10/	15/	8/ to 12/	8/ to 12/6
Housemaids, with board, per week ..	12/	7/ to 17/	12/	10/ to 15/	10/	10/	12/6	8/ to 10/	7/ to 12/6
Nursemaids, with board, per week ..	6/	3/ to 10/	6/	5/ to 12/	6/	8/	7/6	6/ to 8/	5/ to 8/

* Or 1s. to 1s. 6d. per hour. † Or 1s. per hour.

AVERAGE RATES OF WAGES IN EACH PROVINCIAL DISTRICT OF NEW ZEALAND DURING THE YEAR 1895—*continued.*

Description of Labour.	Auckland.	Taranaki.	Hawke's Bay.	Wellington.	Marl-b'rough.	Nelson.	Westland (Goldfield).	Canterbury.	Otago (Part Goldfield).
4. SERVANTS—*continued.*									
Needlewomen:									
With board, per week	..	3/6†	3/†	10/ to 20/	10/	17/6	20/	14/ to 17/6	..
Without board, per day	3/6	..	..	5/	..	3/6	..	4/ to 5/	2/6 to 3/
5. MISCELLANEOUS.									
General labourers, without board, per day	6/	6/ to 8/	8/	6/ to 7/	5/	6/	9/	to 6/	5/ to 8/
Stonebreakers, without board, per cubic yard	3/6 to 4/6	4/	3/6	2/6 to 7/	..	6/	..	2/	2/ to 3/
Seamen, with board, per month ..	£5 to £6	£5	£4	£4 to £5	..	£6	£6	£4 to £5	£4 to £5
	Per day.	Per day.	Per day.	Per day.	Per day.	Per day.	Per day.	Per day.	Per day.
Miners, without board	8/	10/	..	9/	8/	10/	10/	7/ to 8/	8/ to 10/
Engine-drivers, without board ..	7/ to 9/	10/	9/	8/ to 12/	8/	8/	12/	10/ to 12/	10/ 50/*
	Per week.								
Tailors, " ..	40/ to 55/	8/ to 10/	10/	7/ to 10/ 30/*	9/	8/	10/	7/ to 8/	8/ 50/*
Tailoresses, " ..	10/ to 27/6	4/ 25/ to 35/*	5/	3/ to 5/ 20/ to 30/*	7/	2/6	5/	4/ to 5/	4/6 27/6*
	Per Day.		Per week.						
Dressmakers, " ..	3/	2/6 to 4/6	25/ to 30/	3/ to 5/ 20/*	6/	60/*	5/	3/6 to 5/	15/ to 27/6*
Milliners, " ..	2/9	5/ 20/*	25/ to 30/	4/ to 10/ 20/*	6/	40/*	Per week. 20/	4/ to 6/	12/6 to 32/6*

* Per week † Per day.

AVERAGE RATES OF WAGES IN EACH PROVINCIAL DISTRICT OF NEW ZEALAND DURING THE YEAR 1895—*continued.*

Description of Labour.	Auckland.	Taranaki.	Hawke's Bay.	Wellington.	Marl-b'rough.	Nelson.	Westland (Goldfield).	Canterbury.	Otago (Part Goldfield).
5. MISCELLANEOUS—*continued.*	Per day.	Per day.	Per week.	Per day.	Per day.	Per week.	Per week.	Per day.	Per day.
Machinists, without board ..	3/6	4/	25/ to 30/	2/6 to 5/	6/	15/	15/	3/ to 3/6	5/
Storekeepers, " ..	7/	20/ to 35/*	40/ to 60/	20/ to 30/* 8/ 50/ to 60/*	10/	50/	60/	..	20/* 8/ 30/ to 40/*
Storekeepers' assistants, " ..	5/6	4/	30/ to 40/	30/ to 50/*	8/	40/	50/	Per week. 15/ to 40/	6/
Drapers' assistants, " ..	5/6	20/* 4/	35/ to 55/	4/	8/	50/	60/	15/ to 40/	20/ to 25/* 6/ to 7/
Grocers' assistants, " ..	5/6	20/* 4/	35/ to 55/	40/ to 60/* 4/	8/	40/	50/	15/ to 40/	35/* 6/ to 7/
Butchers, " ..	Per week. 30/ to 40/	20/* 30/ to 50/*	50/	30/ to 50/* 8/	7/	45/	40/	Per day. 6/ to 8/	25/* 6/6
Bakers, " ..	25/ to 35/	6/6	50/	40/ to 60/* 8/	8/	45/	60/	6/ to 8/	20/ to 40/* 8/
Storemen, " ..	30/ to 40/	40/ to 50/* 6/ to 7/	50/	40/ to 60/* 6/	10/	40/	60/	6/ to 8/	25/ to 40/* 8/
Compositors, " ..	40/	10/ 35/ to 50/*	50/	30/ to 45/* 8/ 50/ to 80/*	8/	50/	50/	9/	40/ to 45/* 10/ 40/ to 52/6*

* Per week.

Railways.

The history and progress of railways in New Zealand was specially described in the Year-book of 1894, as was also the line partly built by the New Zealand Midland Railway Company. An account of the line belonging to the Wellington and Manawatu Railway Company appears in the Year-book for 1895.

The length of Government railways open for traffic on the 31st March, 1896, was 2,014 miles, the total cost thereof having been £15,425,532 (besides £903,432 spent on unopened lines), and the average cost per mile £7,659. The cash revenue for the year 1895–96 amounted to £1,183,041; and the total expenditure to £751,368. The net cash revenue—£431,673—was equal to a rate of £2 16s. per cent. on the capital cost; the percentage of expenditure to revenue was 63·51. The earnings on some of the lines ranged as high as £5 14s. 10d., and even £7 6s. 7d., per cent.

The following statement shows the number of miles of Government railways open, the number of train-miles travelled and of passengers carried, and the tonnage of goods traffic, for the past seven years:—

Year.	Length open.	Train-mileage.	Passengers.	Season Tickets issued.	Goods and Live-stock.*
					Tons.
1889–90	1,813	2,868,203	3,376,459	12,311	2,112,734
1890–91	1,842	2,894,776	3,433,629	13,881	2,134,023
1891–92	1,869	3,010,489	3,555,764	16,341	2,122,987
1892–93	1,886	3,002,174	3,759,044	16,504	2,258,235
1893–94	1,948	3,113,231	3,972,701	17,226	2,128,709
1894–95	1,993	3,221,620	3,905,578	28,623	2,123,343
1895–96	2,014	3,307,226	4,162,426	36,233	2,175,943

The particulars of the revenue and expenditure for the past seven years are given herewith:—

Year.	Passenger Fares.	Parcels and Luggage.	Goods and Live-stock.	Rents and Miscellaneous.	Total.	Expenditure.	Net Revenue.	Percentages of Expenditure to Revenue.	Percentages of Revenue to Capital Cost.
	£	£	£	£	£	£	£		£ s. d.
1889–90	369,348	37,097	655,007	34,117	1,095,569	682,787	412,782	62·32	2 19 5
1890–91	353,593	38,997	690,779	38,332	1,121,701	700,703	420,998	62·47	2 18 11
1891–92	364,617	41,795	671,469	37,550	1,115,431	706,517	408,914	63·34	2 15 9
1892–93	390,619	44,801	707,785	38,316	1,181,521	732,141	449,380	61·97	3 1 0
1893–94	402,019	45,206	686,469	39,098	1,172,792	735,358	437,434	62·70	2 17 9
1894–95	385,149	43,270	683,726	38,706	1,150,851	732,160	418,691	63·62	2 14 6
1895–96	389,234	54,736	698,115	40,956	1,183,041	751,368	431,673	63·51	2 16 0

* The equivalent tonnage for live-stock has been given.

In the year 1895-96 the railways have been credited with £36,152, the value of services performed for other Government departments, and have been debited with £17,724 for services performed by other Government departments for the railways.

The average revenue per mile of railway was £592 2s. 11d., and the average expenditure £376 1s. 7d.; equal to 7s. 1¾d. and 4s. 6½d. per train-mile respectively.

The total number of miles travelled by trains was 3,307,226.

The traffic in local products for the past seven years was:—

Year.	Wool.	Timber.	Grain.	Minerals.	Horses and Cattle.	Sheep and Pigs.
	Tons.	Tons.	Tons.	Tons.	Number.	Number.
1889-90 ..	91,214	172,814	498,199	797,117	41,058	1,036,875
1890-91 ..	87,701	153,078	528,683	828,079	44,999	1,313,155
1891-92 ..	85,888	170,521	442,277	873,899	47,618	1,117,253
1892-93 ..	96,842	169,910	523,637	884,031	46,590	1,359,860
1893-94 ..	101,340	183,192	411,191	864,538	51,573	1,394,456
1894-95 ..	103,328	198,578	388,556	857,917	52,075	1,563,213
1895-96 ..	99,363	213,132	374,699	878,659	50,766	1,893,058

In the conveyance of the traffic there are employed 270 locomotives of various classes, 509 carriages, and 8,523 wagons. The total number of officers and men employed is about 4,970.

In addition to the above railways, there were 167 miles of private lines open for traffic on the 31st March, 1896—namely, the Wellington-Manawatu Railway, 84 miles; the Kaitangata Railway Company's line, 4 miles; and the Midland Railway, 79 miles.

The cost of the construction of the Wellington-Manawatu Railway was £769,189, being at the rate of £9,157 per mile. The term "cost of construction," as applied to railways, includes value of equipment, rolling-stock, &c., not merely the road-line and buildings. The revenue for the twelve months ending the 28th February, 1896, amounted to £91,986, and the working-expenses to £42,437, equivalent to 46·13 per cent. of the revenue.

The traffic returns from the opened part of the Midland line from the date (27th May, 1895,) on which the Government assumed the management, up to 31st March, 1896, was £13,205, and the expenditure £8,831, equivalent to 66·88 per cent. of the revenue. The total expenditure on the construction of this line has been about £1,300,000.

The following statement gives the number of miles of Government railways open for traffic and in course of construction in the Australian Colonies at the end of 1895:—

Colony.	Railways (State). No. of Miles of Line open for Traffic.	No. of Miles of Line in course of Construction.	Cost of Construction of Open Lines.	Gross Receipts.	Working Expenses.	Percentage of Net Revenue to Cost.
			£	£	£	%
Queensland.. ..	2,379	..	16,603,427	1,408,634	608,709	2·65
New South Wales (30th June, 1896)	2,531	147	36,852,194	2,820,417	1,551,888	3·44
Victoria	3,120	2½	37,909,626	2,581,591	1,543,393	2·73
South Australia ..	1,722	..	12,573,844	950,972	564,593	3·07
Western Australia ('94)	570	392	2,092,372	296,000	182,046	5·44
Tasmania	419	..	3,521,956	149,642	120,351	0·83
New Zealand (March, 1896)	2,014	114	15,425,532	1,183,041	751,368	2·80

In addition to the Government lines open for traffic in 1895-96, New South Wales had 81 miles of private railway; South Australia, 17 miles; Western Australia, 572 miles; Tasmania, 48 miles; and New Zealand, 167 miles.

Accumulation.

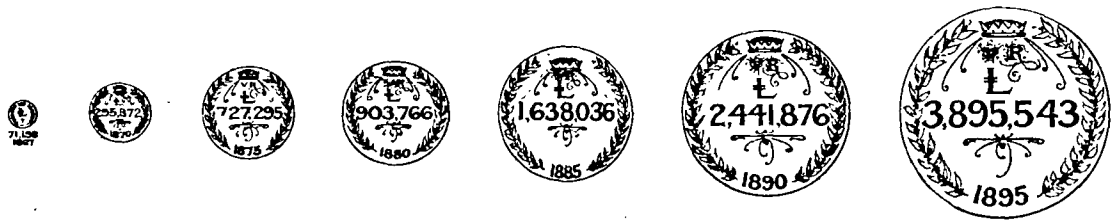
In December, 1895, only five banks of issue were doing business in New Zealand, the Bank of New Zealand and the Colonial Bank having amalgamated during the year. Two of the five banks were wholly New Zealand institutions, with a paid-up capital of £1,250,000, besides which the Bank of New Zealand has £2,000,000 of 4 per cent. guaranteed stock. The Government hold £500,000 of shares in the Bank of New Zealand. The total average liabilities of all five banks for the last quarter of 1895 in respect of New Zealand transactions were £14,491,627, and the average assets £18,159,781. The average amount on deposit during the quarter was £13,544,415, of which sum £969,738 belonged to the General Government. Deposits to the value of £8,119,550 were bearing interest, and £4,455,127 at call. The value of the notes in circulation of these banks was £861,717.

The development of banking in New Zealand since the year 1857 has been very great. Taking for each year the average of the four quarters' returns made by the banks of issue, the figures for 1857, 1873, 1883, 1893, and for the last quarter of 1895 are:—

Year.	Deposits. £	Assets. £	Liabilities. £
1857	343,316	419,860	432,494
1873	4,713,806	7,267,720	5,538,030
1883	8,659,477	17,794,761	9,706,700
1893	14,433,777	18,255,534	15,489,633
1895, Dec. quarter ..	13,544,415	18,159,781	14,491,627

Progress of the Post Office Savings Bank.

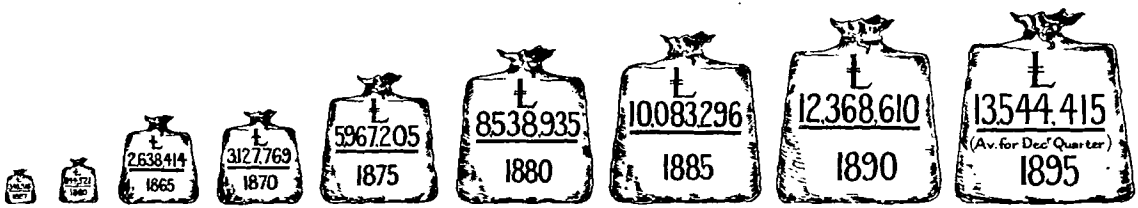
Amount standing to credit of open accounts at end of year.



Besides the above there were 7 Private Savings Banks in 1835 holding £725153 to credit of depositors at end of that year.

Progress of Banks of Issue.

Average amount on deposit.



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In 1873 the deposits of these banks were £16·38 per head of the population. In 1893 they were £21·82 per head, and in December, 1895, £19·56. The ratio of advances to deposits, which was 104·48 per cent. in 1873, reached its maximum in 1883, when it stood at 173·35 per cent. The proportion since that year fell steadily, till in 1894 it was only 86·39 per cent. In December quarter of 1895 there was a slight recovery, the ratio being 88·98 per cent.

The averages for the December quarter of 1895 compared with those of the last quarter of the previous year show a decrease in deposits of £13,605; in assets, of £15,956; and in liabilities, of £43,615.

In 1886 the average amount of advances made by the banks was £15,853,420, equal to £27·23 per head of the mean population. The advances gradually declined in amount and proportion to population until 1891, when they were in value £11,549,145, or £18·34 per head. During the year 1892, however, there was an increase, the average of the advances having been £12,228,425, equal to an amount of £19·04 per head of population; and there was a further increase in 1893, the average being £12,497,563, equal to £19·35 per head. In 1894 they fell to £12,031,537 (£17·71 per head), and in December, 1895, they stood at £12,052,450 (£17·41 per head). The discounts were less in 1895 than in any year since 1872. The largest amount of discounts in any year was £6,061,959 in 1879, a rate of £13·53 per head. In 1889 the discounts were £2,850,944, equal to £4·66 per head; in 1890, £2,524,573, equal to £4·07 per head; in 1891, £2,314,325, or £3·68 per head; in 1892, £2,361,813, being again nearly £3·68 per head; in 1893, £2,307,649, equal to £3·49 per head; in 1894, £2,052,246, or £3·02 per head; and in the last quarter of 1895, £1,758,498, or £2·54 per head.

There was, as above stated, a decrease of £13,605 in the deposits. Exclusive of Government deposits, the deposits bearing interest decreased from £9,104,981 to £8,119,551, or by £985,430; while the deposits not bearing interest increased from £3,986,192 to £4,455,127, or by £468,935. Thus there was a decrease of £516,495 in the average total of private deposits, owing, no doubt, to the lowering by the banks of their rates of interest.

The following shows the average amount of notes in circulation, notes and bills discounted, and bullion and specie in the banks in each of the two past years:—

Average Amount of	December Quarter.		Increase (+) or Decrease (−).
	1894.	1895.	
	£	£	£
Notes in circulation	893,715	861,717	−31,998
Notes and bills discounted ..	1,990,687	1,758,498	−232,189
Specie and bullion	3,221,476	3,333,272	+111,796

Special Banking Legislation.

An Act was passed in 1893 intituled "The Banks and Bankers Act Amendment Act," under which, notwithstanding anything in previous legislation, the shareholders or proprietors of any bank may, from time to time, by extraordinary resolution, authorise its capital to be increased to such an amount and upon such terms as are deemed by them to be expedient. The holders of shares in such increased capital may be granted special privileges notwithstanding anything contained in the charter of the bank.

Any increased capital may be raised by the issue of new shares of such amount as is determined on by extraordinary resolution of the shareholders or proprietors.

The Bank-note Issue Act of the same year provides that notes issued or circulated in the colony by any bank shall, to the amount of the authorised issue, be a first charge on all the assets and property (including the paid-up capital, uncalled capital, and reserve fund—"Banking Act, 1894") of such bank, and that the notes shall be payable in gold only at the office of the bank at the place of issue of the said notes.

The assets and property of a bank are defined as assets for the payment of debts or other obligations contracted or entered upon or due and payable in the colony.

The other clauses (Part II.) of the same Act were originally passed for twelve months only, but their operation was extended in 1894 for another twelve months —viz., till September, 1895. As amended by subsequent enactments, they run as follows: The Governor may declare by Proclamation the notes of any bank named to be a legal tender of money to the amount therein expressed to be payable. The period of time is to be limited by the Proclamation, and no such Proclamation is to be made unless the Governor in Council is satisfied that, as between the bank and its creditors, its assets in the colony exceed its liabilities in the colony. The bank must further pay all such notes in gold on presentation, after expiry of the time limited, at the office of the bank at the place of issue. At any time within six months after the period limited by the Proclamation, the Colonial Treasurer, on being satisfied that a bank-note covered by the Proclamation has been presented and not paid, shall pay the same in gold to any *bonâ fide* holder.

On the 29th June, 1894, the Colonial Treasurer introduced in the House of Representatives three Bills relating to banking, which were thereupon passed through all stages and became law forthwith.

The most important of these, intituled "An Act to guarantee out of the Consolidated Fund a Special Issue of Shares by the Bank of New Zealand to the Amount of Two Million Pounds Sterling," provided for the increase of the capital by the issue of shares* to an amount not exceeding two million pounds sterling, in guaranteed shares of ten pounds each, without further liability. These shares are preferential in respect of both capital and dividend, and the liability of the holders of ordinary shares is to secure payment of the guaranteed shares and the dividends thereon. The directors can refuse to register the transfer of ordinary shares; and no transfer, though passed by directors, is to be held valid till authorised in writing by the President of the bank. The guaranteed shares are to be called in at the end of ten years, and cancelled on payment of the principal sum with accrued dividend. The rate of dividend on preferential shares is not to exceed 4 per cent. per annum, and is to be paid by the bank. The guaranteed or preferential shares and dividends thereon are to be a charge upon and, in case of default by the bank, payable out of the Consolidated Fund of the colony; but if at any time any money shall be payable under the guarantee, the assets

* By further Amendment Act these shares may be issued in the form of negotiable stock certificates or warrants to bearer, of such amounts as the directors may determine. The certificates with warrants or coupons are transferable by delivery. The holders of stock certificates or warrants may exchange these for registered stock, which is made transferable in such amounts as directors may sanction. Shares or stock may be held by any person without limit as to number, provided that the total value does not exceed two millions sterling.

and property of the bank are to be security for the repayment of money so advanced; if the money be not repaid, the Colonial Treasurer may appoint a Receiver.

One-half of the sum of two million pounds authorised by the Act to be raised is to be at the disposal of the bank for use in its ordinary business, and the remainder is to be invested as the Colonial Treasurer may approve, or as may be specially provided by law. Until the guaranteed shares are called in and cancelled, no dividend is to be paid to ordinary shareholders without the consent of the Colonial Treasurer, who is empowered to satisfy himself that any proposed dividend will not unduly affect the security of the colony in respect of the guarantee.

By section 5 of the Act, the Colonial Treasurer might require the directors to call up £500,000, being one-third of the reserve capital, within twelve months, and this has accordingly been done.

As provided by the Act, the head office of the bank has been removed to Wellington, and a new Board of directors elected. The Governor in Council has appointed a President, and an Auditor of the business outside the United Kingdom. An Auditor of the business within the United Kingdom has been appointed by the Agent-General.

If an unfavourable report by one or both of the Auditors, confirmed by the President, as to the conduct of the business of the bank, be received by the Colonial Treasurer, the directors are to amend the management in such manner as the Treasurer may demand in writing.

The shares held in the Bank of New Zealand Estates Company (Limited) by the bank are, pending the completion of liquidation, to be treated in valuing as at par.

"The Bank Shareholders Act, 1894," provides that the directors of any bank may decline to register any transfer of shares upon which there is any liability made by a shareholder to any person of whose responsibility they may not be satisfied. "The Bank Directors and Shares Transfer Act, 1894," gives authority to directors to refuse approval, without assigning reasons, to any transfer of shares on which there is liability. It limits the number of directors to not less than five or more than seven.

"The Bank of New Zealand and Banking Act, 1895," and its Amendment Act.

This Act was passed on the 4th of September, 1895. It provides for writing off the paid-up capital of the Bank of New Zealand (£900,000), together with the proceeds (estimated at £450,000) of the first call of £3 6s. 8d. on the reserve liability of £10 per share.

A sum of £500,000 new capital is to be raised by preferred shares, to be issued to the colony in exchange for Government securities. The preferred shares bear interest at 3½ per cent. The bank may within six years repurchase them at par. Further share capital is to be created by a second call of one-third of the reserve liability (£3 6s. 8d. per share) in four instalments, and the final third may be called up at any time after the 31st December, 1898. The sum of one million pounds, required by the Share Guarantee Act of 1894 to be invested as the Colonial Treasurer might approve, is released for employment by the bank in its ordinary business. So long as the colony remains liable under the Act, one of the directors of the bank is to be appointed by the Governor, and one of the present directors is to resign to make way for the Government appointee.

An Assets Realisation Board is established to purchase all the assets of the Estates Company, and of the Auckland Agricultural Company, for the sum of £2,731,706, being the estimated value of the properties on the 31st of March last, subject, however, to an adjustment of station accounts, the purchase-money to be paid in debentures issued by the Assets Board, having a nine

years' currency and bearing interest at 3½ per cent. per annum from the 31st March, 1895, any deficiency to be guaranteed by the Government as a charge upon the Consolidated Fund of the colony.

Provision is made for securing the Government against loss on account of this guarantee, and the Colonial Treasurer may, in the event of any deficiency, appoint a Receiver in respect of the securities with the powers of a liquidator appointed by the Supreme Court. The Assets Realisation Board is to be a body corporate, consisting of three members, two appointed by the Governor and one chosen by the directors of the bank.

Section 3 of "The Banking Act, 1894," is repealed, and power is given to the Bank of New Zealand to purchase the business and assets of any other bank doing business in the colony, excepting such assets as are found to be bad, doubtful, or valueless. Any such purchase is conditional on ratification by the shareholders of the selling bank and the approval of Parliament. [*The business of the Colonial Bank of New Zealand has since been purchased under the authority given, the contract being approved under the Amendment Act of 1895, section 3, and subsequently ratified by the shareholders of the selling bank.*]

So long as the colony remains in any measure liable under the Act, or the Share Guarantee Act of 1894, the proprietors of the bank may not take any steps towards winding up or dissolving the bank.

The Assets Board are to draw up a balance-sheet every six months, and lay the same before Parliament.

Savings Banks.

The number of post-offices open for the transaction of savings-bank business at the end of 1895 was 357.

There were 30,261 new accounts opened in the year, and 22,001 accounts were closed. The total number of open accounts at the end of 1895 was 137,683, of which 101,337 were for amounts not exceeding £20.

The deposits received during the year amounted to £2,794,506 16s., and the withdrawals to £2,369,333 6s. 7d., the excess of deposits over withdrawals having thus been £425,173 9s. 5d. The total sum standing at credit of all accounts on the 31st December, 1895, was £3,895,543 0s. 3d., which gave an average of £28 5s. 10d. to the credit of each account.

There are seven savings-banks in the colony not connected with the Post Office. The total amount deposited in them in 1895 was £444,273 18s. 8d., of which the deposits by Maoris comprised £217 10s. The withdrawals reached the sum of £471,807 5s. 6d., being in excess of the deposits by £27,533 6s. 10d. The total amount to the credit of the depositors at the end of the year was £725,153 8s. 9d., of which sum £264 14s. 11d. belonged to Maoris.

The following were the securities, &c., standing in the name of the Postmaster-General on account of the Post-Office Savings-Bank Fund on the 31st December, 1895:—

Description of Securities, &c.	Nominal Value.			Value at Cost Price.		
	£	s.	d.	£	s.	d.
Consolidated Loan 1867 Debentures, 4 per cent.	13,000	0	0	12,480	0	0
"Consolidated Stock Act 1884" Debentures, 4½ per cent.	1,064,384	0	0	1,064,384	0	0
"Consolidated Stock Act, 1884" Debentures, 4 per cent.	75,900	0	0	75,900	0	0
Defence Loan 1870 Debentures, 4 per cent. ..	75,000	0	0	72,000	0	0
Defence Loan 1870 Debentures, 4½ per cent...	8,100	0	0	8,100	0	0
District Railways Purchasing Act Debentures, 4 per cent.	42,000	0	0	36,076	17	8
District Railways Purchasing Act Scrip, 4 per cent.	34,100	0	0	34,100	0	0
General Purposes Loan 1873 Debentures, 4 per cent.	5,200	0	0	4,342	0	0
"Government Loans to Local Bodies Act 1886" Debentures, 4½ per cent.	249,800	0	0	249,800	0	0
"Government Loans to Local Bodies Act 1886" Debentures, 4 per cent.	159,000	0	0	159,000	0	0
Greymouth Harbour Board Debentures, 5 per cent.	100,000	0	0	100,000	0	0
Hamilton Borough Debentures, 5½ per cent...	3,000	0	0	3,000	0	0
Hokitika Harbour Board Debentures, 5 per cent.	10,000	0	0	10,000	0	0
"Immigration and Public Works Loan Act, 1870," Debentures, 4 per cent.	174,200	0	0	167,272	0	0
"Immigration and Public Works Loan Act, 1870," Debentures, 4½ per cent.	20,900	0	0	20,527	10	0
Imperial Guaranteed Immigration and Public Works Loan 1870 Debentures, 4 per cent...	400,000	0	0	400,000	0	0
Land for Settlements Acts, 1892 and 1894, Debentures, 4 per cent.	129,100	0	0	129,100	0	0
"Land for Settlements Act, 1892," Debentures, 4½ per cent.	53,966	0	0	53,966	0	0
"Lands Improvement and Native Lands Acquisition Act, 1894," Debentures, 4 per cent.	264,000	0	0	264,000	0	0
"Native Land Purchases Act, 1892," Debentures, 4½ per cent...	125,000	0	0	125,000	0	0
North Rakaia River Board Debentures, 5 per cent.	2,000	0	0	2,000	0	0
Oamaru Borough Consolidated Loan 1893 Debentures, 5 per cent.	13,800	0	0	13,800	0	0
Oamaru Harbour Bonds, 5½ per cent. ..	32,000	0	0	32,000	0	0
Oamaru Harbour Advances, 1887, 5 per cent.	30,000	0	0	30,000	0	0
Patea Harbour Board Debentures, 4½ per cent.	10,000	0	0	10,000	0	0
Thames Borough Debentures, 6 per cent. ..	6,500	0	0	6,500	0	0
Thames Harbour Board Debentures, 5 per cent.	10,000	0	0	10,000	0	0
Treasury Bills, 4 per cent.	367,700	0	0	367,700	0	0
Westport Harbour Board Debentures, 5 per cent.	339,200	0	0	339,200	0	0
Accrued Interest on Post Office Account ..	..			..		
Totals	3,817,850	0	0	3,800,248	7	8

Summary of all Deposits.

If the total deposits at the end of the year be assumed to be equal to the average for the last quarter, then it may be affirmed that, exclusive of Government moneys, the deposits in the several banks of issue and in the two classes of savings-banks amounted at the end of 1895 to £17,195,374. In addition, there are the deposits with building societies, which in 1895 were £229,608; and it is known that there were also deposits with financial companies, of which no particulars have been supplied to the department. The known deposits reach an average of £24 18s. 9d. per head of the population, exclusive of Maoris.

Building Societies.

There were 57 registered building societies in operation in the colony at the end of 1895. Of these, 14 were terminable societies, the rest were permanent.

The total receipts by these societies during their financial year were £584,523, of which deposits comprised £224,590.

The assets at the end of the year were valued at £923,581. The total liabilities were: To shareholders, reserve fund, &c., £678,168; to depositors, £229,608; and to bankers and other creditors, £15,805.

Mortgages.

The total number of mortgages registered (excluding moneys lent under the Government Advances to Settlers Act) in the year 1895–96 was 9,413, representing an amount of £5,573,790. The total sum was advanced as under:—

£			
1,344,833	by 7,366	mortgages	not exceeding £500 each.
793,552	by 1,085	"	between £500 and £1,000 each.
1,728,200	by 823	"	between £1,000 and £5,000 each.
1,707,205	by 139	"	over £5,000 each.

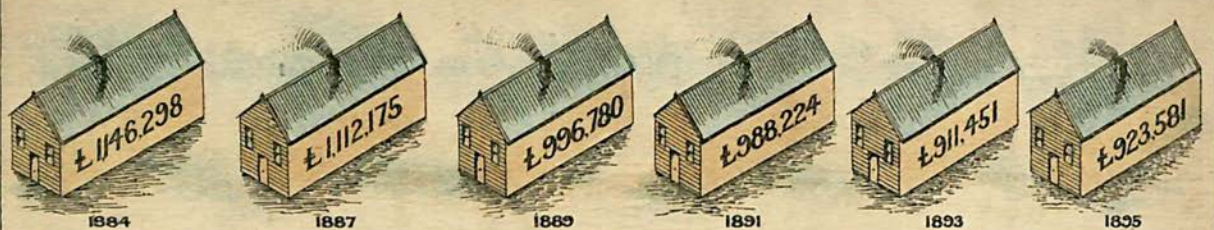
The full amounts borrowed, classified to show the various rates of interest paid, were:—

£	
26,285	in small sums at less than 5 per cent.
833,226	at from 5 per cent. to 5¼ per cent.
732,764	at 5½ per cent.
116,600	at 5¾ per cent.
1,372,261	at from 6 per cent to 6¼ per cent.
371,896	at from 6½ per cent. to 6¾ per cent.
599,542	at from 7 per cent. to 7¼ per cent.
111,651	at 7½ per cent.
382,348	at 8 per cent.
173,416	in small sums, at rates above 8 per cent.
853,801	at rates which are not specified.

Friendly Societies.

The Registrar of Friendly Societies received returns for the year 1894 from 369 lodges, courts, tents, &c., of various friendly societies

Building Societies – Total Assets.



Besides the Building Societies there are also important joint-stock companies doing business of a similar nature. Of the assets of these, however, no return has yet been compiled.

Progress of Friendly Societies – Total worth of Funds.

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throughout the colony, also from 32 central bodies. The number of members at the end of 1894 was 29,963.

The total value of the assets of these societies was £551,520, equivalent to £18 8s. 2d. per member. Of the total assets, the value of the sick and funeral benefit funds was £496,233.

The receipts during the year on account of the sick and funeral funds amounted to £68,838, and the expenditure to £50,886, of which the sick-pay to members reached the sum of £32,547. In addition to the sick-pay, the sum of £28,047 was paid out of the medical and management expenses fund for attendance given and medicine supplied to the members and their families.

Life Insurance.

There were existing in the colony at the close of the year 1894 as many as 67,547 life insurance policies, an average of over 98 in every 1,000 persons living. The gross amount represented by these policies was £18,297,501, an average of £270 17s. 9d. for each policy, and of £26 13s. 4d. for every European inhabitant of the colony at the end of the year. The distribution of these policies among the various life assurance offices is shown in the following table:—

Name of Office.	Number of Years of Business in the Colony.	New Zealand Business only.	
		Number of existing Policies at End of Year 1894.	Gross Amount insured by Policies at End of Year 1894.
			£ s. d.
The Australian Mutual Provident Society	33	20,862	6,134,370 0 0
The Citizens' Life Assurance Company (Limited)	1	206	22,700 0 0
The Colonial Mutual Life Assurance Society (Limited)	11	3,853	1,067,827 1 11
The Equitable Life Assurance Society of the United States	10	903	425,785 0 0
The Mutual Assurance Society of Victoria (Limited)	11	1,310	260,404 17 11
The Mutual Life Association of Australasia	18	3,846	953,577 10 7
The National Mutual Life Association of Australasia (Limited)	15	3,483	856,688 9 8
The New York Life Insurance Company	8	177	69,859 0 0
The Life Insurance Department of the New Zealand Government	25	32,907	8,506,289 0 0
Totals	..	67,547	18,297,501 0 1

It will be observed that nearly half the policies are held in the Government Life Insurance Department. A special article concerning this institution will be found in Part III. of this volume.

Industrial Life Assurance.

In addition to the ordinary life-insurance transactions alluded to above, there were in 1894 two industrial life assurance offices doing business in New Zealand. The number of policies in existence and the gross amount insured by such policies at the end of the year were :—

Name of Office.	Number of Years of Business in the Colony.	New Zealand Business only.	
		Number of existing Policies at End of Year 1894.	Gross Amount insured by Policies at End of Year 1894.
			£ s. d.
The Citizens' Life Assurance Company (Limited)	1	7,916	149,615 9 8
The Provident and Industrial Insurance Company of New Zealand	5	6,091	141,481 17 8
Totals	..	14,007	291,097 7 4

Compulsory Insurance.

There is as yet in New Zealand no law enforcing insurance against sickness, accident, old age, and invalidity. In Germany compulsion is resorted to; and, as the subject is of great interest at the present time, the following remarks on the German system are quoted from the *Annals of the American Academy* for March, 1895 :—

There are three chapters, in which the laws of compulsory insurance against sickness, against accidents, and against old age and invalidity are given textually, and the facts relating to organization and administration quoted in full detail. The first of these measures was passed on the 15th June, 1883. It was modified in April, 1892, in order to bring it into harmony with the other insurance laws which had in the meantime been passed. Sick insurance is about to be extended to agricultural labourers and to servants. At present nearly eight millions of persons are insured, and expenditures for sick relief amount to more than $23,800,000 (£4,950,000) annually. The purpose of sick insurance is to insure a certain and sufficient relief in case of illness during at least thirteen weeks. The employé pays two-thirds of the sick insurance and the employer one-third.

Accident insurance is likewise compulsory and universal. The first law was passed on the 6th July, 1884, and dealt chiefly with industrial enterprises. The law of the 28th May, 1885, extended accident insurance to transportation agencies. A subsequent enactment, bearing the date of the 15th March, 1886, regulates accident insurance for State officials, military officers, and soldiers. A few months later there was a further extension to agriculture and forestry, and it is on the eve of extension to home industry and commerce. Accident insurance is at the cost of employers.

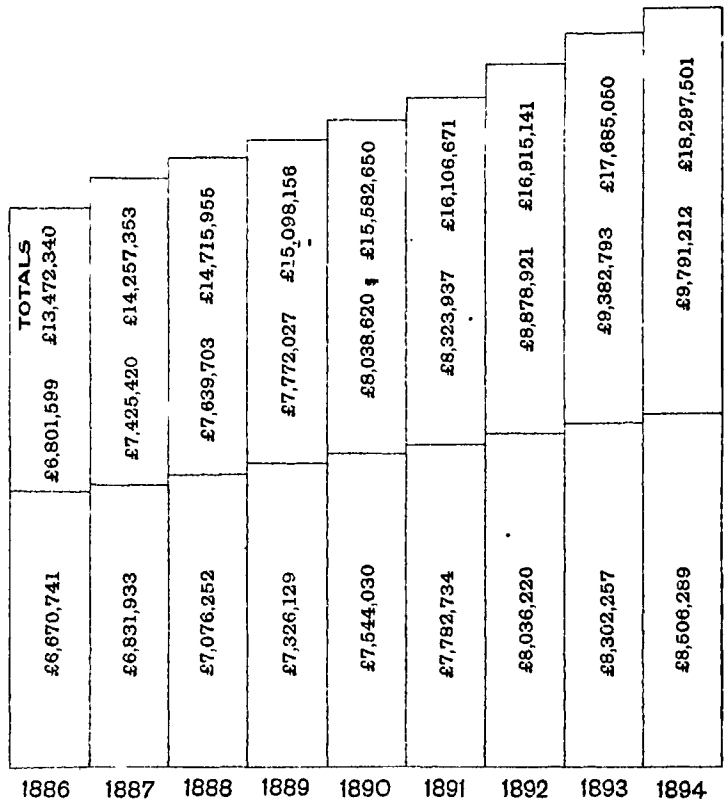
Life Assurance in New Zealand.

Gross amount insured by policies at end of year.

Reference.

Government Life Insurance Department shewn thus ☐

Other Life Insurance Institutions - - - - - - - - ☐



The average amount of Life Assurance per head of European population in New Zealand at the end of each of the above years was:-

1886 ... £22.17.2	1888.. £24.4.7	1890.. £24.14.0	1892.. £26.0.1
1887... £23.12.7	1889.. £24.6.9	1891.. £26.7.2	1893.. £26.6.0

1894... £26.13.4

The amount of Assurance per head of population for 1893, in the following Countries, was; Australasia... £20. Canada. £11. United Kingdom £13. United States £12.

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Invalidity and old age insurance law was enacted on the 22nd June, 1889, and subjects to compulsory insurance after sixteen years of age all persons working for wages in every branch of trade, apprentices and servants included, managing officials, and commercial assistants with regular salaries up to $476 (£100). The old age and invalidity insurance fund is formed by equal contributions from employers and employed, and an Imperial subsidy amounting to $11·90 (£2 9s. 7d.) per annum is granted to every annuity.

Public opinion now very generally favours sickness insurance, regards accident insurance with complacency, but is apparently discontented with the old age and invalidity measure. The law seems to be defective, since, according to a reliable private calculation, nearly 40 per cent. have failed to meet their legal obligations to contribute. The official statement reduces this to 16 or 17 per cent. In four years' time 60,000 claims have had to be refused, and this furnishes ground for criticism and disappointment.

Crown Lands.

Before referring to the results of each of the various methods in operation in 1895–96 for the disposal of Crown lands it is desirable to state that a description of these systems will be found in the first of the special articles in Part III. of this work.

There were 26,584 acres of Crown land sold for cash or money-scrip during the year ended 31st March, 1896, the cash received being £21,117, and the scrip representing a value of £226. The lands absolutely disposed of without sale totalled 143,107 acres, of which reserves set apart for public purposes comprised 60,094 acres; grants to Natives or Europeans under the Native Land Acts, &c., 82,847 acres; and those in satisfaction of land-scrip or otherwise, 166 acres.

The total area of land alienated from the foundation of the colony to the 31st March, 1896, was 21,365,182 acres. This does not include lands sold by Natives to Europeans direct, for which no Crown grants have been issued. The exact quantity so sold cannot be ascertained, but is believed to be very small.

The area open for selection, including 1,210,340 acres as pastoral runs in Southland, was, on the 31st March, 1896, 2,879,945 acres. Excluding this acreage and lands belonging to Maoris, the total area remaining in the hands of the Government for future disposal was 16,617,175 acres; but of this about one-fourth consists of barren mountain-tops, lakes, &c.

The deferred-payment system was abolished by the Land Act of 1892; but, in 1895–96, 456 acres were taken up on this tenure by persons already holding land under deferred-payment regulations. The total area of land taken up under this system, from its commencement to the 31st March, 1896, was 1,285,384 acres, including 99 acres exchanges from other tenures. Of this quantity, the area forfeited was 257,361 acres, while 696,095 acres had been finally alienated by completion of payments. The area still held at the end of March, 1896, was, therefore, 331,928 acres. The following statement gives the number of acres taken up on deferred payment in each of the past ten years:—

	Acres.		Acres.
1886-87	50,527	1891-92	40,467
1887-88	41,100	1892-93	21,084
1888-89	54,419	1893-94	12,669
1889-90	41,376	1894-95	5,497
1890-91	34,091	1895-96	456

The operation of the perpetual-lease system with right of purchase, which became part of the land-law of the colony in 1882, had the effect of lessening the demand for land on deferred payment, as the rental of a leasehold was only 5 per cent. on the upset value of the land, and thus, until the purchase was made, if made at all, the settler had all his capital available for improvements. On the 31st March, 1896, 746,403 acres were in occupation under perpetual lease, in 2,677 holdings. During the year, 1,427 acres, in 7 holdings, were taken up, and 64,501 acres converted into freehold. All the perpetual-lease and deferred-payment selections during the year were made by persons already holding lands under those particular tenures, and who are by law allowed to increase their holdings on the same terms in cases where the selected lands adjoin their own properties. Both these tenures are now superseded by the methods introduced by "The Land Act, 1892," under which, on the 31st March last, 297,593 acres were held for occupation with right of purchase by 1,373 selectors, and 578,465 acres as leaseholds in perpetuity by 2,076 lessees. Included in the foregoing figures are 146 persons who exchanged 56,794 acres to lease in perpetuity from other tenures during the year.

The lands disposed of for village settlements are not included in the sales of land previously stated, and the following details of the number and area of selections to the 31st March, 1896, are given in order to show the extent of these settlements:—

	No.	A.	R.	P.
Village sections for cash	1,649	6,969	3	18
Village sections on deferred payments	1,497	14,840	0	17
Village settlements on perpetual lease	391	6,822	2	3

At the end of March, 1896, there were also 36 village sections, of an aggregate area of 26 acres 1 rood 29 perches, occupied with right of purchase, and 550 selections, containing 9,411 acres 2 roods 3 perches, held on lease in perpetuity.

The freeholds acquired, in addition to the area taken up for cash, have been—

	No.	A.	R.	P.
Village sections, deferred payments	1,131	10,630	1	22
Village sections, perpetual lease ..	47	782	0	29

The forfeitures were—

Village sections, deferred payments	253	2,246	0	15
Village sections, perpetual lease ..	62	1,291	3	11

During 1895-96, 44,237 acres were taken up by special-settlement associations, the average size of each member's selection being about 185 acres.

The area of lands held from the Government on depasturing leases (exclusive of small grazing-runs) amounted to 10,654,305 acres, in 828 runs, yielding an annual rental of £80,066.

The total area of land occupied as small grazing-runs was, at the end of March, 949,012 acres, held by 528 persons, and the total rent received in 1895–96 was £19,755.

A summary of the transactions in Crown lands during the years ended 31st March, 1891–1896, will be found in the next four tables. The first of these shows the acreage of land taken up, and the second the number of holdings, under each description of tenure. The third exhibits the total acreage taken up year by year in each land district; and in the fourth the number of holdings are grouped according to size, the areas varying from less than 1 acre to 1,000 acres and over.

I.—Area of Land taken up under Various Tenures (excluding Pastoral Runs and Miscellaneous Leases) during Each of the Years ending 31st March, 1891-96.

—	1890-1.	1891-2.	1892-3.	1893-4.	1894-5.	1895-6.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Cash lands	100,014	40,501	36,327	34,999	38,695	26,575
Deferred payments ..	34,091	40,467	21,084	12,669	5,454	456
Perpetual lease and small areas	288,917	282,547	122,558	3,854	1,263	1,427
Occupation with right of purchase	..	..	54,271	108,133	75,478	84,968
Lease in perpetuity ..	..	..	55,920	179,993	91,799	122,350
Agricultural lease ..	551	90	194	365	45	36
Occupation lease under "The Mining District Land Occupation Act, 1894"	..	..	..	..	..	2,931
Village settlement—						
Cash	210	429	528	2	24	9
Deferred payment ..	370	182	391	..	..	..
Perpetual lease ..	954	893	2,640	..	..	..
Village settlement, occupation with right of purchase	..	..	..	1	23	2
Village settlement, lease in perpetuity	..	..	..	3,953	4,050	3,365
Village-homestead special settlement	350	2,213	494	2,550	2,743	793
Special-settlement associations	71	1,923*	157,381†	68,852†	†51,346	†44,237
Homestead	945	1,010	38	..	..	..
Special-settlement improved farms	..	..	..	..	9,731	28,348
Small grazing-runs ..	86,161	159,465	92,927	252,693	117,846	46,407
Totals	512,634	529,720	544,153	668,064	398,497	361,904

* Perpetual lease. † Lease in perpetuity.

II.—Number of Holdings taken up under Each Kind of Tenure (excluding Pastoral Runs and Miscellaneous Leases and Licenses) during the Years ended 31st March, 1891–96.

—	1890-1.	1891-2.	1892-3.	1893-4.	1894-5.	1895-6.
	No.	No.	No.	No.	No.	No.
For cash	573	493	552	497	392	476
Deferred payments	258	223	169	96	47	6
Perpetual lease and small areas ..	788	824	385	17	3	7
Occupation with right of purchase ..	..	..	161	461	398	431
Lease in perpetuity	..	..	126	612	372	696
Agricultural lease	4	2	4	5	2	3
Occupation lease under "The Mining District Land Occupation Act, 1894"	..	..	..	..	..	69
Village settlement—						
Cash	87	89	75	3	23	16
Deferred payment	51	23	29	..	..	..
Perpetual lease	56	59	164	..	..	..
Occupation with right of purchase	..	..	..	5	30	3
Lease in perpetuity	..	..	2	203	232	193
Village-homestead special settlement	10	140	33	118	60	19
Special-settlement associations ..	2	13	838	290	262	238
Homestead	9	8	1	..	..	..
Improved-farm special settlement ..	..	..	..	..	107	315
Small grazing-runs	43	80	39	142	60	32
Totals	1,881	1,954	2,578	2,454	1,988	2,504

III. — Lands taken up during the Years ended 31st March, 1891–96 (exclusive of Pastoral Runs and Miscellaneous Leases).

Land District.	1890-1.	1891-2.	1892-3.	1893-4.	1894-5.	1895-6.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Auckland ..	95,510	105,120	115,454	134,992	99,313	67,831
Hawke's Bay ..	45,603	36,008	49,831	24,356	20,141	16,353
Taranaki ..	33,785	55,237	49,064	13,954	35,113	55,850
Wellington ..	108,053	82,311	156,297	84,871	49,586	79,478
Nelson	23,808	12,992	17,797	36,739	34,907	19,421
Marlborough ..	11,023	3,016	8,055	8,227	18,353	15,858
Canterbury ..	133,761	62,831	12,777	94,861	33,744	14,827
Westland ..	313	1,010	162	1,346	1,826	1,765
Otago	47,450	141,565	90,043	159,050	80,439	70,238
Southland ..	13,328	29,630	44,673	109,668	25,076	20,283
Totals ..	512,634	529,720	544,153	668,064	398,498	361,904

IV.—HOLDINGS TAKEN UP DURING THE YEARS ENDED 31ST MARCH, 1891-96 (EXCLUSIVE OF PASTORAL RUNS AND MISCELLANEOUS LEASES), CLASSIFIED ACCORDING TO SIZE.

Size.	1890-1.	1891-2.	1892-3.	1893-4.	1894-5.	1895-6.
	No.	No.	No.	No.	No.	No.
Under 1 acre ..	170	214	154	176	256	259
1 to 50 acres ..	531	581	727	739	696	719
51 to 250 acres ..	603	618	1,253	933	757	1,198
251 to 500 acres	307	255	264	341	169	232
501 to 1,000 acres	173	187	104	150	70	70
1,001 acres and upwards	97	99	76	115	40	26
Totals ..	1,881	1,954	2,578	2,454	1,988	2,504

Lands for Settlement.

"The Land for Settlements Act, 1892," enabled the Government to buy from private persons suitable properties for cutting up and leasing in farms of not more than 320 acres each. Further powers were given the Government by an Act passed in 1894, and by the Amendment Act of 1895, which authorise the compulsory taking of estates in cases where the owners refuse to sell. A full description of the system and its objects is given in the special article on the land-laws of the colony.

Up to the 31st March last the estates purchased numbered 28, containing 86,919 acres, the purchase-money having been £377,553, to which must be added £11,762, the cost of roading, surveys, and administration. The land acquired has been of two classes—namely, rural arable for farms, and suburban land for garden cultivation in 1-acre to 5-acre lots. By the end of the year 19 estates had been subdivided into farms of various sizes, and offered to the public, with the result that the greater part of them had been selected, and various settlers are now resident. At the date mentioned above there had been erected 133 houses, occupied by 643 persons, who had made improvements valued at £13,022. The rentals are bringing in 4·76 per cent. on the sum sunk in the estates (£209,559), which leaves a surplus after paying interest on money raised for their purchase.

As regards past and present operations, the Land Purchase Inspector comments:—

. Nearly all the lands purchased under "The Land for Settlements Act, 1894," have been much improved, and are in excellent heart and condition. Unless they are kept up in this state by skilful husbandry, and by settlers who have the means to do so, they will deteriorate and fall in value. It therefore becomes imperative in the public interest that in the administration of such valuable lands the conditions of the leases in respect of rotation and limitation of cropping, upkeep of fences, and so on, should be strictly enforced. In the eagerness to obtain such lands artful combinations of families and friends lend themselves as applicants for some favourite section, so as to obtain as many chances of a successful draw at the ballot as possible. This acts most unfairly to those who do not resort to that practice. Some power of check should be given the Land Boards to prevent the scramble.

During the year considerable attention has been given to the question of dealing with the pastoral country of Nelson and Marlborough Land Districts, the leases of which run out in the latter half of 1896, but are carried on to the 28th February, 1897, as a more convenient time of the year for shifting stock should there be any change of tenants. In nearly all the runs the lower slopes and valleys have been made freehold, thereby either shutting off the higher-lying Crown lands from access, or, by spotting, rendering the adjacent Crown lands practically worthless. Section 4 of "The Land for Settlements Act, 1894," gives power to deal with this either by purchase or exchange of lands. A large number of adjustments will require to be made if all the Crown lands are to be available for future occupation. A beginning has been made in this important work, but very much more remains to be done.

The Commissioners of Crown Lands report very favourably of the amount of improvements made, and the general compliance with the conditions of the leases, particulars of which will be found in the reports attached. Out of the 397 selectors who have taken up land since the initiation of the scheme, twelve have forfeited their rights through breach of the conditions, and two of these farms have since been reselected, whilst the others will probably be occupied as soon as thrown open again. Out of the total area purchased, 11,895 acres have not yet been selected, but there is no reason to believe that much of this will remain on hand long; indeed, it is known that most of it will be selected so soon as the various causes which at present prevent selection are removed. These estates offer to the sons of farmers in their vicinity an excellent opportunity to acquire lands near their parents, from whom they can obtain help, whilst at the same time, this class of settler is the best that can be secured in the interests of the estates themselves. The experience of the past season has shown the necessity for some amendment in the law with regard to the balloting for the lands, so as to give greater facilities to the class that has been referred to, without their having recourse to what may be termed "family dummyism," a practice which, there is little doubt, has been in operation to a considerable extent during the past year. Any scheme which will secure the right class of tenant will be a great step in advance, for, in dealing with these high-priced lands, want of experience or means on the part of the tenant will very soon depreciate the value of the estates, and prevent their letting again at the same rents.

Improved-farm Settlements.

To provide work for unemployed persons and settle them permanently on the land, a system was authorised in 1894 under which suitable blocks are set aside in areas of 10 acres to 200 acres, and assistance is given by Government to cover cost of clearing, seed, and house-building. The settlers pay 4 per cent. interest, besides the rental of their lands, and these lands are charged with the amounts advanced.

A somewhat prominent feature of the past year's transactions was the extension of this kind of settlement, which was first started the year previous. The time has not yet arrived when entire success can be predicted, but, so far, the system has certainly had

the effect of removing from the towns a considerable number of people who otherwise would have been found in the ranks of the unemployed; and a chance to make homes for themselves, and become producers rather than a burden on the State, has been given to all who are really desirous of becoming *bonâ fide* settlers. Many who have taken up land under this system brought no experience with them to aid in the operations of the pioneer work of settlement, and this had to be gained at some cost to themselves and the State. So long as the Government continues monetary aid by way of assisting in clearing, grassing, and house-building, all will go well; by the time this comes to an end sufficient experience should have been gained, and the farms ought to be stocked. This latter is at present a difficulty with many of the settlers, for it is obvious that many of them can at first do little more than support themselves out of the moneys advanced for clearing, without sparing anything for stock. At the date of last report 18 settlements had been initiated, covering an area of 21,202 acres, which had been allotted to 193 settlers. On the 31st March last additional settlements had been allotted, making the number 39 in all, covering 63,597 acres, which is divided into 665 allotments, averaging somewhat less than 100 acres each farm. Out of this number 573 sections had been allotted. At the date of the report 679 persons were residing, while the area felled was 9,301 acres, 8,138 acres being in grass. The expenditure for houses, clearing, and grassing amounted to £22,438. The total value of improvements, including those paid for by Government, amounted to £26,984. In connection with these settlements, 67 miles of road, on the clearing of which the settlers have been employed part of their time, have been partially formed. On 31st March, 1896, the time had not expired at which the rentals were to commence, except in two cases; consequently only the sum of £125 9s. had been received at that date on this account.

The settlements are chosen, so far as possible, in positions where there is a likelihood of the settlers obtaining some employment in the settlement operations of the surrounding country, but the amount of land suitable for this class of holding is very limited, and, consequently, a neglect of the above condition has to a certain extent taken place.

There are five of these settlements in Auckland, one in Hawke's Bay, fourteen in Taranaki, nine in Wellington, five in Otago, five in Southland.

Special-settlement Associations.

The total area held in this class of settlement on the 31st March last was 234,181 acres, as against 291,067 acres for the previous period. Twelve blocks, containing 44,237 acres, were balloted for during the year, and the selectors numbered 238. Considerably more than half of the association settlements are in the Wellington District, Taranaki following next in order. The settlements formed since the Act of 1892 came into force are held on

lease in perpetuity. The only thing which distinguishes these settlements from lands selected on the ordinary lease-in-perpetuity tenure is that the ballot is confined to the members of the association, and the area is limited to an average of 200 acres throughout the block, the limit being 320 acres. As a matter of fact, the average comes out a good deal below 200 acres. It has been pointed out more than once that in the eagerness to secure blocks for this kind of settlements the representatives of the associations did not always make their selections wisely, and as a consequence it is found that many blocks were chosen in parts of the country unsuited to holdings of the size of 200 acres, much of it being land very broken in character, and only adapted for pastoral purposes in much larger holdings. In nearly all cases the blocks were outside the points to which roads had been made, and hence one of the difficulties of settling on the lands when allotted. Whilst every effort has been made to afford the necessary access to the lands, it is obvious that a system of roading so extensive as to provide all the blocks with means of communication is the work of many years. It is clear, from what has transpired since the selection of some of the blocks, that many of the members of the associations were unfitted either by experience or monetary means to settle on the land, and, moreover, that some joined with the idea of being able to transfer their interests, contrary to what the regulations provide. The Land Boards have, however, been careful to see that the law is applied as it was intended, and this has resulted in a great many forfeitures during the year. In the Wellington District alone, the interests of 393 selectors, nominally holding 78,003 acres, have been either forfeited or surrendered, and the lands thrown open in larger-sized holdings. The same has occurred with some of the Taranaki associations.

Wherever the association blocks have been located in places suitable for 200-acre sections a large amount of settlement and improvement has taken place.

Village-homestead Settlements.

Very few transactions took place during the year 1895–96, for the system has, in a great measure, been supplanted by the improved-farm system. Eleven new selections were made, the area taken up being 633 acres. There were thirty forfeitures for non-compliance with conditions, and thirty-eight exchanges to other tenures, or surrenders. The total advances made to settlers from the first is £25,600, and the settlers have paid in rent and interest £17,601 11s. 1d. There were 275 selectors in arrear, owing £2,000 14s. 2d.; and the total value of improvements was £87,178 7s. 6d.

Government Advances to Settlers.

In 1894 was passed the Government Advances to Settlers Act, designed to afford, consistently with the public safety, a relief to the settlers to whom high rates of interest and the heavy incidental

expenses on the mortgage of land had become burdensome, and thus to remove an obstacle to the progress of the colony. As this important measure is the subject of a special article, it is unnecessary to do more here than exhibit the extent to which advances had been authorised at the latest date for which information has been published. At the close of the financial year there had been received 3,276 applications for advances, amounting in the aggregate to £1,256,583, of which 67 per cent. was required to pay off old mortgages. The Board had considered 2,926 of the applications received, and sanctioned 2,196 advances to the aggregate amount of £722,427, of which £539,490 had been accepted by the applicants, and £429,172 actually paid to them.

Information and instructions respecting the provisions of the Act have been widely distributed through the agency of the Valuers employed by the Advances to Settlers Office, and of the Postmasters and other officers of the public service; and during the months of April and May applications were received for 591 loans, amounting to £222,308, while 505 advances, to the amount of £172,735, were sanctioned by the Board.

The amending Act of last session so enlarged the scope of the original measure as to render eligible for advances the satisfactory securities which many of our settlers can offer in suburban lands occupied for farming, dairying, or market-gardening purposes; in educational and other reserves subject to "The Land Act, 1892"; in Crown land held by license under the deferred-payment system; and in land under lease from a leasing authority under "The Public Bodies' Powers Act, 1887," entitling the tenant to his improvements.

The General Board of the Advances to Settlers Office has been reconstructed. The complaints are fewer now than when the Act was first brought into operation, when its provisions were not clearly understood; and difficulties in administration, which could only be overcome by experience, are now fairly met.

"*The Pastoral Tenants' Relief Act, 1895.*"

The exceedingly severe winter of 1895 rendered necessary some measure of relief to the pastoralists in the South Island, which was secured under the above Act. The parts of the country which suffered most were Canterbury and Otago, the other districts to a much less extent. The Land Boards made exhaustive inquiries into the losses of the settlers, as the members travelled about through the districts affected. The results, up to the 31st March, may be stated briefly as follows, though there are a few cases as yet undecided. The number of tenants dealt with was 405, holding 7,312,796 acres; the stock depastured in 1895 was 2,344,850 head; the stock lost in excess of average was 699,559 head; the estimated value of such stock was £211,560; the number of cases where relief has been granted was 344. The nature of the relief granted is

as follows: remission of rent due, £11,059; reduction of future rentals, £16,383; remission of sheep-tax, £772.

The extension of leases varied from two years up to twenty-one years.

Occupation of Land.

The results of the census taken in April, 1891, show that there were at that date in New Zealand 43,777 occupied holdings of over 1 acre in extent, covering an area of 19,397,529 acres, of which 12,410,242 acres were freehold of the occupiers, and 6,987,287 acres were rented from—(1) private individuals, (2) Natives, (3) public bodies, and (4) the Crown (for other than pastoral purposes). The following table shows the number of holdings of various sizes, and number of acres held in fee-simple and on lease, excluding the Crown lands rented for pastoral purposes only :—

Sizes of Holdings.	Number of Holdings.	Acreage.		
		Freehold.	Leasehold, &c.*	Total.
Acres. Acres.				
1 to 10	11,116	28,124	24,343	52,467
10 „ 50	8,899	148,965	105,751	254,716
50 „ 100	5,613	277,135	158,128	435,263
100 „ 200	6,851	654,729	374,022	1,028,751
200 „ 320	3,916	609,857	403,462	1,013,319
320 „ 640	3,802	1,057,676	660,070	1,717,746
640 „ 1,000	1,321	662,612	395,849	1,058,461
1,000 „ 5,000	1,675	2,144,627	1,280,558	3,425,185
5,000 „ 10,000	247	1,208,819	559,980	1,768,799
10,000 „ 20,000	189	1,911,063	788,341	2,699,404
20,000 „ 50,000	117	2,507,848	833,083	3,340,931
50,000 „ 100,000	24	801,647	723,000	1,524,647
Upwards of 100,000 acres ..	7	397,140	680,700	1,077,840
Totals, 1891	43,777	12,410,242	6,987,287	19,397,529
Totals, 1886	36,485	11,728,236	5,348,838	17,077,074
Totals, 1881	30,832	10,309,170	4,897,727	15,206,897

The extent of land rented from the Crown for pastoral purposes, including the small grazing-runs, amounted in April, 1891, to 12,469,976 acres.

The number of persons engaged in agricultural and pastoral pursuits in 1891, as ascertained from the results of the census taken in April of that year, was 68,607, of whom 65,950 were males and 2,657 females. Of this number 56,671 males and 2,387 females were directly engaged in agricultural, and 9,279 males and 270 females in pastoral occupations.

* Excluding Crown pastoral leases.

Ownership of Land.

Statistics of land assessed under "The Land and Income Assessment Act, 1891," were prepared in 1892 by the taxing department. The most important table then made shows the number of freeholders outside boroughs and town districts, classified according to size of holding, with the values, improved and unimproved, of the land held in each class. From this table are excluded the holdings of persons having less than 5 acres, and included are all lands outside towns; that is to say, lands which may be considered productive. Ownership of land is of course distinct from occupation, and the number of owners must necessarily be less than the number of occupied holdings shown previously in the table giving census results:—

FREEHOLDERS OF FIVE ACRES AND OVER, CLASSIFIED ACCORDING TO SIZE OF HOLDING (EXCLUSIVE OF LAND IN BOROUGHS AND TOWN DISTRICTS, ETC.).

Acres.	Number of Owners.	Improved Value.*	Unimproved Value.
		£	£
5 and under 10 ..	2,820	678,032	312,139
10 " 20 ..	3,015	806,959	401,425
20 " 30 ..	2,267	663,050	352,021
30 " 40 ..	1,428	532,242	292,753
40 " 50 ..	2,318	642,000	359,245
50 " 60 ..	2,412	813,165	469,106
60 " 70 ..	1,463	522,686	295,523
70 " 80 ..	1,162	582,378	373,015
80 " 90 ..	1,423	546,970	310,777
90 " 100 ..	1,061	561,973	332,253
100 " 200 ..	8,267	5,461,487	3,239,817
200 " 320 ..	4,575	4,688,671	2,861,409
320 " 500 ..	2,531	4,352,224	2,680,446
500 " 640 ..	1,022	2,377,803	1,470,907
640 " 1,000 ..	1,143	3,652,884	2,342,827
1,000 " 2,000 ..	992	5,121,688	3,381,176
2,000 " 3,000 ..	311	2,703,380	1,798,500
3,000 " 4,000 ..	146	1,706,128	1,150,432
4,000 " 5,000 ..	109	1,393,844	969,723
5,000 " 6,000 ..	66	1,047,158	717,983
6,000 " 7,000 ..	50	822,486	564,312
7,000 " 8,000 ..	38	727,542	477,931
8,000 " 9,000 ..	29	648,600	436,612
9,000 " 10,000 ..	25	778,427	537,801
10,000 " 20,000 ..	148	5,495,958	3,771,082
20,000 " 30,000 ..	45	2,743,301	1,839,700
30,000 " 40,000 ..	30	2,517,765	1,741,038
40,000 " 50,000 ..	9	987,659	719,708
50,000 " 75,000 ..	14	1,418,031	994,468
75,000 " 100,000 ..	6	1,086,623	859,028
100,000 " 150,000 ..	4	624,980	421,772
150,000 and over ..	6	2,583,281	1,853,588
Totals	38,935	59,289,375	38,328,462

* "Improvements" are defined as including houses and buildings, fencing, planting, draining of land, clearing from timber, scrub, or fern, laying down in grass or pasture, &c.

A comparison of last assessment with the assessments of 1882, 1885, and 1888 gives the following results:—

FREEHOLDERS OF LAND (5 ACRES AND OVER) OUTSIDE BOROUGHS AND TOWN DISTRICTS, ETC.

Acres.	Year	Persons.		Companies.		Totals.	
		No.	Improved Value.	No.	Improved Value.	No.	Improved Value.
			£		£		£
5 and under 100	1892	19,323	6,214,330	46	135,125	19,369	6,349,455
	1889	18,752	6,337,531	53	141,573	18,805	6,479,104
	1886	17,043	5,953,325	32	80,964	17,075	6,034,289
	1883	14,740	5,150,215	26	16,761	14,766	5,166,976
100 „ 1,000	1892	17,513	20,399,453	25	133,616	17,538	20,533,069
	1889	16,702	17,113,939	41	245,925	16,743	17,359,864
	1886	15,451	18,008,086	20	132,663	15,471	18,140,749
	1883	14,248	17,758,653	19	137,905	14,267	17,896,558
1,000 „ 10,000	1892	1,740	14,702,987	26	246,266	1,766	14,949,253
	1889	1,608	12,902,749	26	326,191	1,634	13,228,940
	1886	1,615	13,610,112	30	417,853	1,645	14,027,965
	1883	1,466	13,746,311	18	221,280	1,484	13,967,591
10,000 „ 50,000	1892	212	10,379,708	20	1,364,975	232	11,744,683
	1889	201	9,333,536	22	981,710	223	10,315,246
	1886	213	9,633,758	17	684,788	230	10,318,546
	1883	215	10,516,263	9	261,181	224	10,777,444
50,000 and over ..	1892	18	2,257,541	12	3,455,374	30	5,712,915
	1889	16	1,851,590	11	3,340,459	27	5,192,049
	1886	18	2,312,891	11	2,824,249	29	5,137,140
	1883	15	2,243,220	8	3,299,023	23	5,542,243
Totals ..	1892	38,806	53,954,019	129	5,335,356	38,935	59,289,375
	1889	37,279	47,539,345	153	5,035,858	37,432	52,575,203
	1886	34,340	49,518,172	110	4,140,517	34,450	53,658,689
	1883	30,684	49,414,662	80	3,936,150	30,764	53,350,812

The Commissioner of Taxes, in his report on the last assessment, remarked that "the number of owners of 5 acres and over—38,935—is 1,503 more than in 1888, and the total value —£59,289,375—is an increase of £6,714,172. It appears that 19,369, or very nearly half the owners, possess less than 100 acres of land. There are 17,538 owners of from 100 to 1,000 acres, value £20,533,069; 1,766 owners of from 1,000 to 10,000 acres, value £14,949,253; 232 owners of from 10,000 to 50,000 acres, value £11,744,683; and 30 owners of 50,000 acres and over, value £5,712,915."

The *total* number of owners of land in the colony was 91,501, and the value of their holdings amounted to £92,371,166 for improved land, £54,427,175 representing the unimproved value. There are included a considerable number of properties which were assessed to "owner," the names of the persons to whom they belonged not being ascertainable or ascertained by the assessors; and there are

also included properties of societies and associations not being liable to taxation. The foregoing make up a total of 1,845; and, in comparing the figures now given with those of the 1888 assessment, allowance should be made for the fact that they were omitted in the 1888 statistics. Properties assessed to "owner" may, as a rule, be taken to be under £100 in value.

About half the landowners—namely, 45,192—had land of an unimproved value of less than £100, and 23,709, or about a fourth of the total, land of a less improved value than £100.

A table is added giving the number of owners, classified according to the values of their holdings:—

Class.	Number of Owners.	Improved Value.	Number of Owners.	Unimproved Value.
		£		£
Under £500	63,841	10,825,213	76,399	8,621,360
£500 and under £1,000	12,901	8,888,580	6,922	4,794,530
£1,000 „ £10,000 ..	13,569	33,938,211	7,496	19,208,387
£10,000 and over	1,190	38,719,162	684	21,802,898
Totals	91,501	92,371,166	91,501	54,427,175

The total value of all the land in the colony, with improvements, was assessed at £122,225,029. Crown and Native lands, with reserves, &c., account for the difference between the sum given in the table above and the full value.

To convey an idea of the number of persons and companies owning large estates, a schedule of those owning 10,000 acres and more of country land on the 1st November, 1891, is given hereunder:—

FREEHOLDERS OF 10,000 ACRES AND OVER, CLASSIFIED ACCORDING TO SIZE OF HOLDING.

Size of Holding	Persons.		Companies.		Total.	
	No.	Area.	No.	Area.	No.	Area.
		Acres.		Acres.		Acres.
10,000 to 20,000 acres ..	139	1,964,760	9	121,070	148	2,085,830
20,000 „ 30,000 „ ..	42	1,038,860	3	71,498	45	1,110,358
30,000 „ 40,000 „ ..	24	827,996	6	213,759	30	1,041,755
40,000 „ 50,000 „ ..	7	301,480	2	90,952	9	392,432
50,000 „ 75,000 „ ..	12	753,642	2	137,256	14	890,898
75,000 „ 10,000 „ ..	5	432,555	1	88,350	6	520,905
100,000 „ 150,000 „ ..	1	118,157	3	358,831	4	476,988
150,000 acres and over ..	..	..	6	1,321,036	6	1,321,036
Totals	230	5,437,450	32	2,402,752	262	7,840,202

AGRICULTURE.

Until 1895 the agricultural statistics were collected and compiled by the Registrar-General, under authority of "The Census Act, 1877," annually in the month of February, except in census years, when the collection was made with the enumeration of the people. Under this Act statistics of the acreage in grass and in all kinds of cultivation were formerly taken in February; and, at the same time, the estimated yields of all the principal crops were obtained from the farmers themselves.

By the Agricultural and Pastoral Statistics Act, passed in 1895, the duty of collecting the returns devolved upon the Department of Agriculture. The plan adopted under the Act of 1895 is similar to that used in the United Kingdom, the account of land laid down in crop being taken much earlier than formerly, while estimates of produce are made after the results of threshing are known.

Statistics of the land in cultivation, and of live-stock, were accordingly taken in December, 1895, and the compiled results published in detail in the *New Zealand Gazette* of the 28th March, 1896, while the estimated yields of corn-crops (wheat, oats, barley, and rye) were made public on the 11th June following. A summary of the particulars then given is shown in the accompanying tables; but, in comparing these figures with the results obtained in former years, it must be remembered that, under the new Act, statistics of the acreage and crops of land held and cultivated by Maoris are included; whereas previously information about the farming carried on by Maoris was obtained only when a census of the Native race was taken.

The yields given in the table following were arrived at from a few of the average crops in each riding of every county. In one or two districts, threshing not being sufficiently far advanced, an estimate was made. The quality of the grain was reported to be generally good.

In 1876 the number of occupied and cultivated holdings was estimated to be, on an average, 14·88 to every 100 adult males; in 1881, 17·30; in 1886, 20·17; and in 1891, 22·79. Assuming the ratio of adult males to total male population to be the same as existed at the census of 1891, the number of holdings in 1895 give an average of 25·40 to every 100 of the adult male population. It is highly satisfactory to observe this progress, indicating as it does that a continually increasing proportion of the grown people are settling upon the land.

The number of holdings occupied and cultivated in 1896 is not shown in the tables published by the Department of Agriculture, but the particulars for the five preceding years are:—

OCCUPIED AND CULTIVATED HOLDINGS OVER AN ACRE IN EXTENT.

1891	38,083	1894	45,290
1892	41,224	1895	46,676
1893	42,768		

ACREAGE AND ACTUAL YIELD IN PRINCIPAL CORN-CROPS.

District.	Wheat.			Oats.			Barley.			Rye.		
	Acres.	Yield per Acre, in Bushels.	Total Bushels.	Acres.	Yield per Acre, in Bushels.	Total Bushels.	Acres.	Yield per Acre, in Bushels.	Total Bushels.	Acres.	Yield per Acre, in Bushels.	Total Bushels.
Auckland ..	8,923	26	231,998	6,253	24	150,072	945	30	28,350	148	10	1,480
Hawke's Bay ..	695	28	19,460	6,830	30	204,900	1,842	26	47,892	138	30	4,140
Taranaki ..	1,793	24	43,032	3,924	30	117,720	482	34	16,388	25	21	525
Wellington ..	7,400	26	192,400	18,627	30	558,810	763	30	22,890	147	13	1,911
Marlborough ..	5,179	27	139,833	3,588	31	111,228	3,853	23	88,619	81	26	2,106
Nelson ..	1,826	20	36,520	1,945	23	44,735	1,990	26	51,740	39	17	663
Westland* ..	..	..	..	41†	..	..	2†	..	..	..	..	..
Canterbury ..	169,495	27	4,576,365	128,055	30	3,841,650	12,198	28	341,544	512	12	6,144
Otago ..	50,130	32	1,604,160	195,525	37	7,234,425	13,283	33	438,339	2,276	27	61,452
Totals ..	245,441	27·88	6,843,768	364,747	33·62	12,263,540	35,356	29·30	1,035,762	3,366	23·3 0	78,421

* Not included in averages or totals. † Fed off.

NUMBER OF ACRES.

Provincial Districts.	In Grass, sown *after* land ploughed.	In Grass, surface sown: land not ploughed.	In Hay, included in either or both of the previous Columns.	In Bare Fallow.	In Grain-crops.	In Green and other Crops.	In Garden.	In Orchard.	Total in Grass, Crop, and Fallow.	In Plantations of Forest-trees.
Auckland ..	533,669	866,862	16,141	5,386	28,154	72,457	3,141	9,339	1,519,008	8,843
Taranaki ..	137,485	360,938	6,063	312	7,113	11,289	896	564	518,597	1,410
Hawke's Bay ..	243,515	974,373	16,683	1,823	10,818	26,350	1,299	756	1,258,934	3,917
Wellington ..	300,280	1,778,754	14,401	4,942	28,207	47,219	2,805	2,987	2,165,194	2,651
Marlborough ..	73,374	151,038	2,026	643	14,147	8,893	322	441	248,858	979
Nelson ..	78,238	163,010	2,194	733	6,090	20,056	286	654	269,067	1,134
Westland ..	16,071	33,495	1,111	33	43	1,449	113	166	51,370	1
Canterbury ..	1,478,481	353,667	27,662	10,725	318,904	235,593	4,576	2,673	2,404,619	20,129
Otago ..	1,393,810	348,110	10,537	33,442	261,374	257,444	4,311	1,782	2,300,273	4,182
Totals ..	4,254,923	5,030,247	96,818	58,039	674,850	680,750	*17,749	19,362	10,735,920	43,246

* 14,669 acres private garden, and 3,080 acres market garden.

The extent of land in cultivation (including sown grasses and land broken up but not under crop) amounted to 10,735,920 acres. Of this area, land under artificial grasses comprised 86·49 per cent.; land under grain-crops, 6·28 per cent.; land under green and other crops, 6·34 per cent.; land in garden and orchard, 0·35; and land in fallow, 0·54 per cent.

The wheat harvest of 1896 was generally good throughout the colony, the total yield showing an average of 27·88 bushels per acre, the crop realised being 6,843,768 bushels, against 3,613,037 bushels in 1895, 4,891,695 bushels in 1894, 8,378,217 bushels in 1893, and 10,257,738 bushels in 1892. Owing to the small harvest in 1895, the exports of wheat (and flour in equivalent bushels of wheat) for that year were 36,034 bushels only, while the imports were 158,792 bushels.

It has been estimated that, exclusive of the quantity required for seed, the yearly consumption of wheat per head of mean population is rather less than 6·30 bushels. Accepting, then, 6·30 bushels as the amount per head required for food, and assuming the mean population for 1896 to be 750,000 persons (including Maoris), it follows that 4,725,000 bushels will satisfy the actual food requirements for the year. In addition, seed for, say, 250,000 acres must be provided; this, at 2 bushels per acre (500,000 bushels), brings up the total quantity required by the colony to 5,225,000 bushels. The wheat crop for 1896 was 6,843,768 bushels, so that the harvest of 1896 has provided not only sufficient wheat for the food and seed requirements of the colony, but also a surplus of 1,618,768 bushels available for export, in addition to 608,364 bushels, the balance of previous year's stocks held by farmers and others at the time the statistics were collected.

Of 245,441 acres in wheat this year, there were no less than 169,495 acres in Canterbury and 50,130 acres in Otago.

The area under wheat, the estimated gross produce in bushels, and the average yield per acre for each of the last eleven years are next shown :—

Year.	Land under Wheat.	Estimated Gross Produce.	Average Yield per Acre.
	Acres.	Bushels.	Bushels.
1886	173,891	4,242,285	24·40
1887	253,025	6,297,638	24·89
1888	357,359	9,424,059	26·37
1889	362,153	8,770,246	24·22
1890	335,861	8,448,506	25·15
1891	301,460	5,723,610	18·99
1892	402,273	10,257,738	25·50
1893	381,245	8,378,217	21·98
1894	242,737	4,891,695	20·15
1895	148,575	3,613,037	24·32
1896	245,441	6,843,768	27·88

The following gives the area in wheat, and the estimated produce, for the Australian Colonies for the season of 1895:—

Colony.	Wheat-crop, 1895.		
	Acres.	Bushels.	Bushels per Acre.
Queensland	28,997	545,185	18·80
New South Wales	647,483	7,041,378	10·88
Victoria	1,373,668	11,445,878	8·33
South Australia (1894)*	1,732,711	13,610,062	7·86
Western Australia..	21,433	170,401	7·95
Tasmania	52,028	872,000	16·76

As previously stated, the estimated yearly consumption of wheat per head of population in New Zealand is 6·30 bushels.

The difficulty of correctly computing the consumption of bread-stuffs is shown by the great differences in the estimates arrived at.

The average quantity required per head of the population (exclusive of that used for seed) has been estimated by Mr. Coghlan at 6·4 bushels for New South Wales, and by the late Mr. Hayter at 4½ to 5 bushels for Victoria.

The consumption of wheaten breadstuffs in New Zealand thus appears to be considerably in excess of that in Victoria.

The following is the average annual consumption of wheat per inhabitant in some of the principal countries of the world:—

United Kingdom	5·6 bushels.
Canada	6·6 "
France	8·1 "
Germany	3·0 "
Russia	2·1 "
Italy	5·4 "
United States	4·5 "

The English consumption during the last twenty-five years appears to have ranged from 5½ to 6 bushels per head of population. It is stated that the consumption in the United States is not now as high as 4½ bushels, the severe industrial depression of 1893 causing an increase in the use of cheaper grains. It is believed that Indian corn replaces at least one-fourth of the wheat that would otherwise be consumed.

The wheat crop of the world is given by the Department of Agriculture of the United States in the Statistician's report for March, 1895; the figures for four years are quoted here in a condensed form:—

* Statistics not collected in 1895.

WHEAT PRODUCE OF THE WORLD.

Countries.	1891.	1892.	1893.	1894.
	Bushels.	Bushels.	Bushels.	Bushels.
Europe	1,208,590,000	1,416,082,000	1,469,526,000	1,538,216,000
Asia	342,611,000	286,944,000	355,016,000	341,959,000
Africa	47,051,000	38,252,000	31,891,000	47,098,000
North America ..	688,814,000	578,748,000	446,387,000	515,488,000
South America ..	48,805,000	57,292,000	81,453,000	104,000,000
Australasia ..	32,840,000	35,963,000	41,161,000	42,035,000
Total ..	2,368,711,000	2,413,281,000	2,425,434,000	2,588,796,000

From the report above mentioned the following figures have been taken, showing the wheat produce of the various British possessions for the four years 1891–94 :—

WHEAT PRODUCED IN BRITISH POSSESSIONS.

Countries.	1891.	1892.	1893.	1894.
	Bushels.	Bushels.	Bushels.	Bushels.
Great Britain.. ..	77,016,000	62,621,000	52,466,000	62,568,000
Australasia	32,840,000	35,963,000	41,161,000	42,035,000
Canada	62,034,000	48,799,000	43,524,000	43,221,000
Cape Colony	2,727,000	3,000,000	3,891,000	3,098,000
Cyprus	2,000,000	2,000,000	2,000,000	2,000,000
India	256,704,000	206,640,000	268,539,000	258,459,000
Total	433,321,000	359,023,000	411,581,000	411,381,000

The crop of oats in 1896 was 12,263,540 bushels, against 10,221,393 bushels in 1895, showing an increase of 2,042,147 bushels. Out of the total yield for 1896, only 1,031,502 bushels were grown in the North Island—the crop for the South Island being 11,232,038 bushels, of which 7,234,425 bushels were grown in Otago, and 3,841,650 bushels in Canterbury.

The extent of land in oats grown for grain in 1896 was 364,747 acres, against 351,852 acres in the preceding year. The breadth of land in oats sown for green food or hay was 171,556 acres, which is an increase of 4,396 acres on the figures for 1895.

The average yield per acre was, in 1896, estimated at 33·62, and in 1895, 29·05 bushels.

The oat-crop for 1895 in the Australian Colonies was as follows :—

	Acres.	Bushels.	Average per Acre.
Queensland	1,477	30,463	20·62
New South Wales ..	30,636	562,725	18·36
Victoria	266,444	5,633,286	21·14
South Australia (1894) ..	13,619	172,605	12·67
Western Australia ..	1,634	20,246	12·39
Tasmania	34,385	927,875	26·98

There were 35,356 acres returned as under barley in 1896, the estimated crop being 1,035,762 bushels, an average yield per acre of 29·30 bushels. In 1895 the area under barley was 36,519 acres, and the crop 1,000,612 bushels.

The estimated potato-crop was 207,011 tons from 31,997 acres, or an average yield per acre of 6·47 tons. In 1895 the crop was 139,869 tons from 25,339 acres.

A comparison of the gross yield of potatoes with the amount exported in each of the twelve years, 1883–94, shows that for such period an average of 597lb. a head was retained in the colony. Allowing for waste, pig-feed, and seed, the average amount retained for human consumption was found to be 449lb. a head.

Turnips and rape form a most important crop in a sheep-breeding country such as New Zealand, and in 1892 the area of land under this crop amounted to 422,359 acres. The returns for 1895 gave only 385,788 acres, but for the present year no less than 445,598 acres were set down as under this crop.

The cost of growing turnips sown broadcast and in drills is: Broadcast—Ploughing, 5s. 6d. per acre; harrowing, 3s. per acre; rolling, 1s. per acre; seed and sowing, 1s. 6d. per acre: total, 11s. per acre. Drill—Ploughing, 5s. 6d.; grubbing, 3s.; harrowing, 3s.; rolling, 1s.; drilling, 3s. 6d.; hand-hoeing, 10s.; horse-hoeing, 5s.; seed and sowing, 2s. 6d.; manure, 10s. to 15s.: total, £2 3s. 6d. to £2 8s. 6d. per acre.

Only 352 acres were under hops in 1896, as against 778 acres last year. No account of the produce for this year has been taken, but in 1895 the yield was 7,556cwt. Small as this area is, it is more than sufficient to supply local requirements, as the import of hops in 1895 amounted only to 668cwt., while the export reached 2,619cwt. In 1890 the total quantity used by the breweries in the colony amounted to 3,940cwt. Of the land under hops in 1896, 231 acres were in the Waimea County, and 92 in Collingwood, both in the Provincial District of Nelson.

The growing of tobacco does not progress in New Zealand. In 1889, 34 acres were being cultivated; in 1890, 25 acres; in 1891, 16 acres; in 1892, 6 acres; in 1893, 4 acres; in 1894, 4 acres; and in 1895, 5 acres, producing 1,599lb. of dried leaf. Statistics of this crop were not taken in 1896.

The extent of land in garden was 17,749 acres, of which 14,669 acres were private gardens, and 3,080 acres market gardens. In artificial plantations of forest-trees there were 43,246 acres.

There were 19,362 acres in orchard in 1896, a decrease on the area so returned in the previous year. The fruit-crop of the colony is supplemented by a considerable import from the Australian Colonies and Fiji.

Mr. W. J. Palmer, pomologist, remarks, in regard to the development of fruit-culture:—

The first requisite to successful fruit-growing is that the grower should have a thorough knowledge of the kinds of fruit, and the varieties of those kinds best

suited to the soil and climate of the locality in which he is settled. As in this sparsely-peopled and recently occupied country we have not the accumulated experience of past generations to guide us, it is obvious we can only obtain the necessary knowledge by experiment, and by experiment on so large a scale and so continuous as to be altogether beyond the means of the individual citizen, and therefore calling for the direct intervention of the State itself. Schools of horticulture, each with its experimental orchard, should be established throughout the colony in localities indicated by its varied climatic conditions. In these schools the lads and young men destined to make a living by fruit-culture could acquire a thorough practical knowledge of the most approved methods of treating the various diseases to which the trees are subject, of the insect and fungoid pests which infest the trees, and the means of successfully combating them. This is secondary only in importance to the actual growing of the fruit, and the proper handling, grading, packing, and preserving the ripe fruit for market. Such an institution, after a few years, would be self-supporting; the necessary labour would be found by the students, who would, of course, have to pay small fees in return for their tuition; and revenue would be derived from the sale of fruit, and of trees for planting out. In addition, members might be admitted, as in the Royal Horticultural Society of England, by paying an annual subscription, the full value of which they would receive in the newest and most improved varieties of trees and plants, such as they could not procure otherwise, except by the costly process of importing from abroad.

Nor would schools of this sort be an innovation in principle, for the State of California, United States of America, already has them in a very complete form; Victoria, New South Wales, and this colony have their experimental farms, and Victoria has her schools of mines and travelling dairy. What these institutions do for the miner, the farmer, and dairyman, the schools of horticulture would do for the fruit-grower; and the objects to be gained by them are at least of equal importance to the State, for Nature has in the most unmistakable manner destined New Zealand to be pre-eminently a fruit-growing country, by the fertility of its soil, its varied temperature, and its unsurpassed climate.

Of the extent to which the industry may grow in a very short space of time California affords a striking example, her fruit-production already amounting annually to a value running into millions of pounds sterling; and New Zealand can produce, without artificial aid, almost everything that the former has to raise by the expensive agency of irrigation.

New Zealand is essentially suited for grazing purposes. Wherever there is light and moisture, English grasses thrive when the natural bush and fern are cleared off. In fact, the white clover gradually overcomes the fern; and, from the mildness of the winter season, there are few places where there is not some growth, even in the coldest months of the year. In all parts of the colony stock live, although in varying condition, without other food than such as they can pick up. Sown grass land, as might be expected, heads the list of cultivations.

At the beginning of the year 1896 there were 9,285,170 acres under artificial grasses. Of these, 4,254,923 acres had been previously ploughed, presumably under grain or other crops, while 5,030,247 acres had not been ploughed. Much of the latter area was bush- or forest-land, sown down in grass after the timber had been wholly or partially burnt off.

Seeds are used much as in Great Britain, the following being a common mixture: Perennial ryegrass, 25lb. to 30lb. per acre; cocksfoot, 2lb.; alsyke, 2lb.; timothy, 3lb.; cowgrass, 2lb.; red clover, 2lb.; white clover, 2lb.; rape, 1lb.: total, 39lb. to 44lb. per

acre. Pastures are renewed at intervals of from four to eight years, according to the nature of the land.

The following shows the acreage in sown grasses in the Australasian Colonies in 1895:—

	Acres.
Queensland	17,312
New South Wales	344,035
Victoria	201,056
South Australia (1894)	26,904
Western Australia	23,344
Tasmania	221,470
New Zealand (February)	8,829,717

It will be observed that the acreage of land under sown grasses was about ten times as great in New Zealand as in the whole of Australia and Tasmania. When compared in size with the colonies of Australia, New Zealand is relatively small—about one-thirtieth of their total area—but in respect of grazing capabilities the relative importance of this country is much greater. Australia is generally unsuitable, owing to conditions of climate, for the growth of English grasses, and the amount of feed produced by the natural grasses throughout the year is very much less per acre than is obtained from the sown grass lands in New Zealand; indeed, it may be said that the average productiveness of grass-land is about nine times as great here as in Australia, or that land in this colony covered with English grasses may be considered equal, for grazing purposes, to an area of Australian land about nine times as great.

In addition to the artificially-sown pastures, the returns for 1896 show that 15,038,259 acres of native grass lands were utilised for stock-feeding by the runholders of the colony.

In 1896 the returns show a produce of 903,639 bushels of rye-grass seed and 7,041,078lb. of cocksfoot.

The total value of all agricultural produce, &c., for the current year is reckoned at about £5,112,351, made up as follows:—

	£
Grains and pulse	2,469,752
Root-crops	1,112,619
Hops and other crops	49,366
Hay and green forage (excluding grass)	704,937
Grass-seed	252,897
Garden and orchard produce	522,780
Total value of agricultural produce	£5,112,351

Animals and Produce.

Returns of sheep are sent in April of each year to the Agricultural Department, and other live-stock are enumerated by the collectors of agricultural and pastoral statistics under the Act of 1895. The numbers so obtained are given in the following table, together with the number of each kind of live-stock, according to the returns for the census years 1886 and 1891 by way of comparison.

Live-stock.	Census, 1886 (excluding Stock owned by Maoris).	Census, 1891 (including Stock owned by Maoris).	1896 (including Stock owned by Maoris).
Horses	187,382	211,040	237,418
Brood-mares (included in foregoing) ..	29,853	31,276	16,662*
Asses and mules	297	348	426
Cattle (including calves)	853,358	831,631	1,047,901
Breeding-cows (included in foregoing) ..	279,136	280,711	374,222
Milch-cows (also included in breeding-cows)	Not specified	206,906	276,217
Sheep (including lambs)	16,564,595	18,128,186	†19,826,604
Breeding-ewes (included in foregoing) ..	6,457,355	7,371,429	†8,465,653
Goats	10,220	9,055	Not enumerated.
Pigs	277,901	308,312	239,778
Poultry	1,679,021	1,790,070	Not enumerated.

The figures in the above statement do not include for 1886 the live-stock owned by Maoris. The census taken in 1896 of the Native race, their stock and cultivations, about the time of the general census, shows the following numbers of stock owned by Maoris: Sheep, 314,406; cattle, 29,125; no statement of the horses, of which they have many, being given.

According to returns made to the Department of Agriculture, the flocks of the North Island increased from 5,285,907 sheep in the year 1886 to 8,994,646 in 1895, or at the rate of 70 per cent., while sheep in the South Island increased only from 9,888,356 to 10,831,958 or less than 10 per cent., in the same period. For the North Island the increase during the ten years was 3,708,739 sheep, and for the South Island only 943,602.

Figures for each year are given, as illustrative of the remarkable progress of sheep-farming in the North Island in comparison with that in the South.

SHEEP.

	North Island.	South Island.	Total.‡
1886	5,285,907	9,888,356	15,174,263
1887	5,506,485	9,649,141	15,155,626
1888	5,668,996	9,373,202	15,042,198
1889	5,990,244	9,433,084	15,423,328
1890	6,588,346	9,527,767	16,116,113
1891	7,159,927	9,593,825	16,753,752
1892	8,204,029	10,366,723	18,570,752
1893	8,685,361	10,695,008	19,380,369
1894	9,169,352	11,061,477	20,230,829
1895	8,994,646	10,831,958	19,826,604

An interim return of sheep in New Zealand on 30th April, 1896, prepared by the Department of Agriculture, and presented to Parliament on 11th July, 1896, gives the numbers in the North Island as 9,108,641, and in the South, 9,873,439: a total for the colony of 18,982,080. Compared with the figures for 1895, the North Island

* With foal at foot, or to foal this season. † In April, 1895. ‡ Excluding sheep on the Chatham Islands, which, at the census of 1891, numbered 75,679.

has thus an increase of 113,995, while the South Island flocks have declined by no less than 958,519, leaving a net decrease of 844,524 for the whole colony. The shortage in the South Island is mainly attributable to excessive losses sustained through the severe weather prevailing in the winter—the loss above the average from this cause being estimated at 700,000; there was also a large increase in the number of frozen carcases exported from South Island ports. The return from which the above are quoted is, however, subject to revision, so that the figures must not be accepted as absolutely correct.

It has been estimated that the annual consumption of mutton in New Zealand is equivalent to 2·25 sheep per inhabitant, and that the number of sheep required in the present year for food will be about 1,687,500. (Maoris, for the purposes of this calculation, have been included.)

Two important advantages that sheep-farming has in New Zealand are mentioned by Mr. J. A. Johnstone in the Year-book for 1894. They are: (1) the low cost of the production of mutton, (2) the high percentage of natural increase. Respecting the first point, it has been proved beyond all doubt that, under ordinary conditions, the very choicest of mutton can be so produced as to pay the grower handsomely when sold at 2d. per pound for the carcase at the nearest shipping-port. To the British sheep-farmer this statement, of course, is valueless by itself; but, when we add that this mutton would cost the London butcher, delivered *ex* steamer at the dock, only 3½d. per pound, he will be able to realise in some measure what a wonderful grazing-country New Zealand is, and to understand how it is that settlers of the right stamp have done so well. Then, with regard to the high percentage of increase, there need only be cited a few average returns from well-known flocks to show what excellent lambings New Zealand farmers obtain under good management.

LAMBING RETURNS.—AVERAGES.

Locality.	Breed of Flock.	Breed of Rams.	Breed of Ewes.	No. of Ewes.	Percentage of Lambs.	Remarks.
North Island ..	Lincoln	Lincoln	Lincoln	7,517	81·04	Land merely surface-sown in English-grass pasture.
„ ..	„	„	„	5,301	85·05	
„ ..	„	„	⅞ Lincoln	12,177	100·00	
„ ..	Romney	Romney	Romney	1,141	96·17	
„ ..	Lincoln	Southd'n	Lincoln	2,033	94·71	
South Island ..	Merino	Merino	Merino	14,765	75·36	Mountainous country in n'tive past're, unimproved.
„ ..	„	B. Leic'str	„	4,235	88·94	
„ ..	Cross-bred	„	Cross-bred	8,624	80·82	
„ ..	Half-bred	„	Half-bred	2,747	82·79	
„ ..	B. Leic'str	„	B. Leic'str	778	90·77	
„ ..	Lincoln	Lincoln	Lincoln	452	88·08	In English-grass pasture.
„ ..	R. Marsh	R. Marsh	R. Marsh	253	111·46	
„ ..	E. Leic'str	E. Leic'str	E. Leic'str	464	93·34	
„ ..	Shropshire	Shropshire	Shropshire	168	97·41	
„ ..	Southd'n	Southd'n	Southd'n	114	96·87	

The above returns are fair average ones, but much higher might have been shown if exceptional cases had been selected.

As showing the actual cost of managing two large estates in New Zealand (South Island), No. 1 carrying 20,000 cross-bred sheep, and No. 2 carrying 40,000, the subjoined table may prove interesting :—

	No. 1. Per Head. s. d.	No. 2. Per Head. s. d.
Cost of shearing, including scouring and putting wool f.o.b.	0 6·5	0 6·3
Management, shepherding, dipping, &c.	0 10	0 9·6
Cost of providing special feed (turnips, green feed, chaff, &c.)	1 1	1 6·3
Cost of renewing English grass ..	2 0	1 5
Total per head	4 5·5	4 3·2

The total number of cattle (including calves) and of dairy cows in each provincial district, for the years 1895 and 1896, are shown in the next table, from which it will be seen that cattle have increased from 964,034 to 1,047,901, or at the rate of nearly 9 per cent. during the year; and dairy cows from 257,140 to 276,217, or rather more than 7 per cent. The totals for provincial districts are as follow :—

Provincial Districts.	1895. Cattle (including Calves).	1895. Dairy Cows (included in foregoing).	1896. Cattle (including calves).	1896. Dairy Cows (included in foregoing).
Auckland	258,872	59,410	286,406	59,625
Taranaki	151,465	49,450	164,694	56,479
Hawke's Bay	92,705	11,594	74,646	10,224
Wellington	185,544	44,193	206,857	45,361
Marlborough	9,995	3,365	11,688	3,785
Nelson	34,842	9,986	33,823	9,939
Westland	8,269	2,285	10,130	2,778
Canterbury	81,199	29,500	90,067	33,108
Otago	141,143	47,357	169,590	54,918
Totals	964,034	257,140	1,047,901	276,217

Out of a total of 964,034 cattle in the colony, the North Island is shown to have had, in 1895, 688,586, or 71 per cent.; while the South Island had only 275,448, or 29 per cent. Similarly, the dairy cows in the North numbered 164,647, and in the South Island 92,493. In 1896 the North Island had 732,603 head of cattle, or 70 per cent. of the whole number in the colony (1,047,901), and the South Island 315,298, or 30 per cent.; and of dairy cows the North Island owned 171,689, or 62 per cent., and the South Island 104,528, or 38 per cent.

Thus, the North Island, while fast overtaking the South Island in the matter of sheep-breeding, contains at the same time many more dairy cows and other cattle.

TABLE showing the LIVE-STOCK in each of the various Counties.

Counties.	Horses.	Cattle, including Calves.	Sheep, including Lambs.	Pigs.	Counties.	Horses.	Cattle, including Calves.	Sheep, including Lambs.	Pigs
Mongonui	1,033	4,213	19,621	1,124	Waipawa	3,676	27,493	669.513	3,682
Whangaroa	777	1,421	4,394	2,005	Patangata	2,167	21,471	718,505	534
Hokianga	2,638	12,830	8,920	4,010	Pahiatua	1,586	13,391	127,956	1,914
Bay of Islands	1,687	16,421	26,701	1,060	Wairarapa North... ...	4,867	31,487	731,133	3,509
Hobson	1,451	6,080	11,967	1,650	Wairarapa South... ...	5,524	37,310	575,994	3,034
Whangarei	3,005	17,504	40,997	1,705	Hutt	4,205	12,762	206,770	4,207
Otamatea	1,360	10,799	35,827	831	Sounds	53	1,091	112,186	515
Rodney	1,714	10,417	57,699	988	Marlborough	3,777	8,434	538,738	2,946
Waitemata	2,071	11,224	31,523	1,540	Kaikoura	965	2,163	197,609	686
Eden	3,309	6,100	6,124	2,310	Collingwood	1,004	5,459	41,710	1,671
Manukau	6,447	41,613	86,271	4,925	Waimea	4,047	12,300	218,673	5,776
Coromandel	580	2,758	8,719	334	Buller	327	3,503	1,585	694
Thames	1,094	1,302	7,954	1,451	Inangahua	717	5,901	27,006	1,112
Ohinemuri	1,011	3,650	4,206	709	Grey	766	5,274	13,277	1,046
Piako	1,825	25,871	233,053	1,041	Westland	1,179	4,856	15,339	909
Waikato	3,002	18,416	78,215	3,128	Amuri	926	3,552	418,435	509
Waipa	3,421	18,352	47,166	3,953	Cheviot	735	3,105	168,181	605
Raglan	1,501	17,012	49,029	1,492	Ashley	7,268	15,511	808,706	12,230
Kawhia	4,242	7,690	27,370	7,529	Selwyn	13,989	28,302	750,827	25,597
West Taupo	815	3,179		1,055	Akaroa	2,486	16,480	305,489	2,336
East Taupo ...	650	817	20,329	1,669	Ashburton	7,882	9,331	882,086	11,098
Rotorua	367	318	4,674	252	Geraldine	3,960	6,489	784,292	5,298
Tauranga... ...	1,900	13,031		1,532	Levels	3,512	4,957		3,139
Whakatane	2,020	6,012	56,443	1,680	Mackenzie	1,074	1,701	469,217	533
Waiapu	2,942	5,628	185,976	3,186	Waimate	4,268	6,896	715,941	3,910
Cook	7,231	23,748	691,388	3,172	Waitaki	5,646	14,462	621,972	4,198
Clifton	1,200	11,089	62,377	928	Waihemo	1,118	3,255	153,450	577
Taranaki	3,902	53,476		6,498	Waikouaiti	1,504	8,239	100,640	2,059
Stratford	1,493	23,954		2,584	Peninsula	859	3,497	9,518	1,183
Hawera	4,923	57,041	114,588	6,417	Taieri	6,814	26,114	255,649	5,331
Patea	2,809	19,134	199,110	1,770	Bruce	3,254	11,094	157,170	2,308
Waitotara	2,430	11,550	153,137	2,072	Clutha	4,667	13,152	311,980	2,607
Wanganui	4,963	13,446	343,907	6,659	Tuapeka	3,791	6,844	382,695	1,596
Rangitikei	4,221	20,344	508,376	3,378	Maniototo	2,104	5,494	375,044	880
Oroua	4,994	26,727	617,258	5,684	Vincent	2,047	4,031	411,542	1,442
Kiwitea	1,566	10,059		2,076	Lake	1,474	2,885	168,709	712
Pohangina	788	4,705		899	Southland	14,921	52,824	951,878	12,291
Manawatu	2,339	15,723	214,915	2,212	Wallace...	4,596	17,699	465,324	2,462
Horowhenua	1,883	9,353	151,068	2,650	Fiord				
Wairoa	1,808	3,289	456,761	1,022	Stewart Island	...	...	...	...
Hawke's Bay	6,091	22,303	1,395,712	4,512					

The distribution of the live-stock according to counties shows that Hawke's Bay County had the greatest number of sheep, Taranaki of cattle, and Southland of horses.

The following gives the number of the principal kinds of live-stock in the several Australasian Colonies for the year 1895 :—

	Cattle.	Horses.	Sheep.	Pigs.
Queensland	7,012,997	444,109	19,587,691	89,677
New South Wales	2,465,411	518,181	56,977,270	273,359
Victoria	1,833,900	431,547	13,180,943	337,588
South Australia (1893) ..	675,284	201,484	7,325,003	88,153
Western Australia	187,214	50,001	2,132,311	28,396
Tasmania..	177,038	34,835	1,727,200	65,620
	1896.	1896.	30th April, 1895.	1896.
New Zealand	1,047,901	237,418	19,826,604	239,778

New Zealand thus takes second place in order for number of sheep, and fourth for the number of her cattle.

The next statement, based on returns published by the Statistician of the Department of Agriculture of the United States, shows the approximate numbers of cattle, horses, sheep, and pigs in the civilised world in 1893–94 :—

	Cattle.	Horses.	Sheep.	Pigs.
North America ..	57,887,438	17,717,139	51,292,797	48,059,045
South America ..	57,610,183	5,486,036	96,242,137	2,723,516
Europe	104,480,093	36,483,400	187,144,203	49,164,341
Asia*	60,846,904	4,279,241	39,922,366	488,937
Africa..	6,094,883	1,238,574	35,589,208	546,909
Australasia	11,872,360	1,786,644	124,645,606	1,156,325
Oceania	131,796	4,066	12,607	33,151
Totals ..	298,873,657	66,995,100	534,848,924	102,172,224

The numbers owned in the United Kingdom, her colonies and possessions, are :—

	Cattle.	Horses.	Sheep.	Pigs.
United Kingdom ..	11,519,417	2,067,549	33,642,808	3,265,898
British India and Ceylon	53,766,050	1,055,385	30,074,606	486,700
Australasia	11,872,360	1,786,644	124,645,606	1,156,325
Canada	4,117,799	1,231,831	3,513,419	1,732,313
Cape of Good Hope, Natal, and Basutoland	3,226,115	587,418	17,665,352	333,866
Other British Possessions	188,332	138,703	959,696	30,285
Totals ..	84,690,073	6,867,530	210,501,487	7,005,387

Butter has always held an important position among the productions of the New Zealand small-farmer. Made by different persons and in different ways, it has not been generally suitable for the requirements of the English market, although considerable quantities have been exported both to Australia and to the United Kingdom; but the success attending the efforts made to produce butter of uniform high quality in dairy factories, and the fairly remunerative prices realised for such butter in England, have caused

* Includes only British India and Ceylon, French East Indies, Java, Hongkong, Japan, Russia in Asia (Caucasia and Trans-Caucasia), and Cyprus.

great attention to be given to co-operative dairying for the purpose of supplying produce for the English market.

The following are the results of the returns made in the census years mentioned of the quantity of butter and cheese annually produced in the colony. The numbers represent the quantities produced in the preceding years :—

ANNUAL PRODUCTION OF BUTTER AND CHEESE.

Census Year.	Cheese. Lb.	Butter. Lb.
1881	3,178,694	8,453,815
1886	4,594,795	12,170,964
1891	6,975,698	16,310,012

The figures for 1891 include 1,969,759lb. of butter and 4,390,400lb. of cheese made in factories. The output of the factories rose in 1896 to 11,336,776lb. of butter, and 9,683,520lb. of cheese, by the census returns, or 9,008,160lb. of butter and 9,357,600lb. of cheese, according to special returns compiled by the Department of Agriculture. In September, 1896, there were 73 butter-factories, 73 cheese-factories, with 16 butter- and cheese-factories, besides 113 creameries.

The nominal capital of co-operative dairy companies ranges from £1,000 to £3,000, usually in £1 shares. In most cases about three-fourths of the nominal capital is allotted, 2s. 6d. per share being paid upon application for shares, a further 2s. 6d. per share on allotment of shares in the company, the balance as may be required in calls of not more than 1s. per share per month; this is ample to meet all the requirements of a successful business, as also to provide first-class buildings and equipments for the manufacture of the produce. As a general rule, the business is first charged with interest at the rate of 5 or 6 per cent. per annum on the paid-up capital before any dividends or bonuses are declared on the milk-supply: this gives every shareholder a fair rate of interest on the capital invested in the company, and allows the factory to be worked on purer co-operative lines.

The factories and creameries are, on the whole, substantially built, and planned with a view to economy in working so as to decrease the cost of production to the lowest possible minimum compatible with the turning-out of first-class goods. They are all equipped with the most modern machinery and plant, and a good number of the butter-factories and creameries are provided with mechanical refrigerators.

The approximate cost of well planned, built, and equipped cheese- and butter-factories are as follows: Cheese-factories: 800 to 1,000 cows' capacity, £1,200; 600 to 700 cows' capacity, £900; 400 to 500 cows' capacity, £750. Butter-factories: 800 to 1,000 cows' capacity, complete with mechanical refrigerator, £1,500; 600 to 800 cows' capacity, complete with mechanical refrigerator, £1,250; 400 to 500 cows' capacity, complete with mechanical refrigerator, £1,000.

The importance of this industry to New Zealand has caused the Government to appoint a chief dairy expert, and instructors in

dairying, who visit factories and give lectures and addresses on the benefits of co-operative dairying, the making of cheese and butter, and subjects relating thereto. Particulars of this industry will be found in a separate article in Part III.

The growth of our export trade of butter and cheese with the United Kingdom, which must be regarded as the principal market, is shown previously.

MINING.

The natural mineral resources of New Zealand are very great, and have exercised in the past a most important influence on the development and progress of the colony. Gold to the value of £51,351,002 was obtained prior to the 31st December, 1895. In 1895 the value of the produce was £1,162,164. In the earliest years the gold was obtained from alluvial diggings, but at the present time much is taken from gold-bearing quartz, which is distributed widely through several parts of the colony, and thus there is a much better prospect of the permanency of this industry than alluvial diggings could give. The greater portion of the gold obtained is, however, still got from alluvial workings. Of the gold entered for exportation during the year ended 31st March, 1896—viz., 302,690oz., representing a value of £1,196,081,—nearly 47 per cent. came out of quartz-mines; but, if the total yield of gold obtained from the colony be taken, the value of which is £51,652,504, of this, gold to the value of about £10,560,433, or 20 per cent., came out of quartz-mines, and £41,092,071, or about 80 per cent., from alluvial mines. The yield of silver to the end of 1895 amounted to £171,263 in value, the quantity mined in 1895 having been 85,024oz., valued at £10,679. Of other minerals, the value of the product to the same date amounts to £13,253,364, of which kauri-gum yielded £7,683,529, and coal, with coke, £5,333,279. The quantities and values of precious metals and minerals obtained during the year 1895, and the total value of mining produce since 1853, are :—

	1895.		Total Value since 1853.
	Oz.	£	£
Gold	293,491	1,162,164	
Silver	85,024	10,679	
	378,515	1,172,843	51,522,265
	Tons.		
Copper-ore ..	..	..	17,866
Chrome-ore ..	..	..	37,367
Antimony-ore ..	54	1,486	51,754
Manganese-ore ..	210	525	57,788
Hæmatite-ore ..	..	..	226
Mixed minerals ..	62	880	71,555
Coal	740,827	410,762	5,308,761
Coke (exported) ..	288	715	24,518
Kauri-gum ..	7,425	418,766	7,683,529
		£2,005,977	£64,775,629

Gold.

The history of the finding of gold in this colony was briefly sketched in the Year-books for 1893 and 1894, and need not, therefore, be repeated here, but a word may be said on recent developments in mining. Great changes have taken place since the early days, when a man wanted nothing but a pick and shovel, tin dish and cradle, to enable him to earn a livelihood on the diggings. The rich shallow soil has been to all appearances worked out, the ground is getting deeper, the inroads of water more troublesome, and greatly-improved appliances are needed in order to wash away the masses of drift that overlie the gold-bearing layers on the bottom.

The difficulty for many years experienced in working the beds of the larger rivers has been at last overcome by the use of dredging machinery. On the Clutha River, where many dredges are at work, very few fail to pay interest on the capital invested in them. Dredging has not only been adopted for working river-beds, but has also been used to great advantage on river flats, which are known to contain large bodies of water, and cannot be profitably worked by any other means. So successful, indeed, has this method proved, that it seems likely to develop into a very considerable branch of the mining industry.

So numerous are rapid streams and rivers in New Zealand that water might easily be utilised to supply motive-power for mining machinery. It has been used at Skippers for years to generate electricity by means of dynamos, the current being transmitted a distance of several miles over a high range for the purpose of driving a crushing battery. Great improvements have been made in the appliances since the method was first adopted, and at present some 67 per cent. of the power required to generate electricity is obtained in this way.

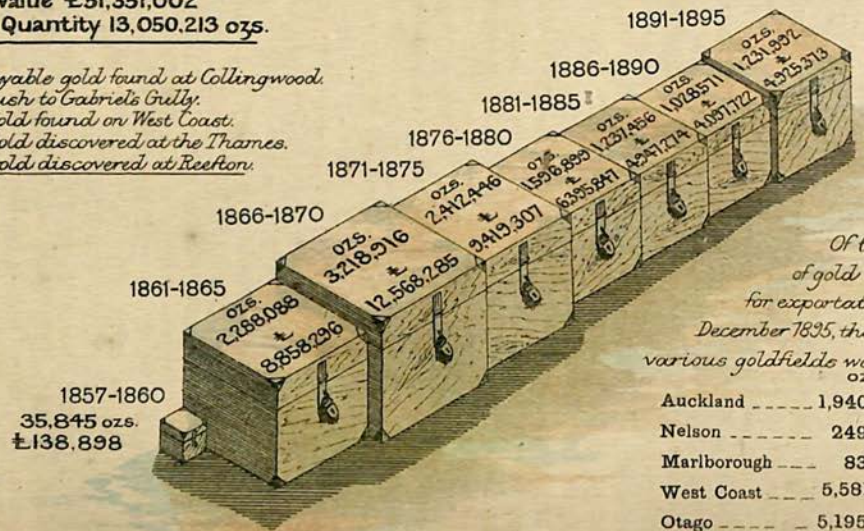
Skippers was the first place where electricity has been used to drive a crushing battery. The same force is employed to work a dredge on the Shotover River. Electricity has been adopted with equal success at the Brunner coal-mines, near Greymouth, for working the haulage and pumping machinery.

The total number of gold-miners employed in 1895 was 13,226, as against 11,412 for the previous year. The increase was principally in the Auckland District, where 1,714 more men were employed than in 1894. Dividing the value of gold exported by the number of men employed, gives an average earning of £87 17s. 5d. per man, as against £77 18s. 11d. per man for the year 1894—an increase of £9 18s. 6d. per man. Taking the value of the gold from the different districts, and dividing it by the number of men employed, it is found that the earnings of the miners employed in Auckland District were £122 15s. 9d.; in Marlborough, £52 5s. 8d.; on the West Coast, £151 5s. 1d.; and in Otago, £77 10s. 9d. In some places, more especially in Otago, Nelson, and the West Coast,

Total Value and Quantity of Gold entered for duty for exportation from 1st January 1857 to 31st December 1895.

Total Value £51,351,002
Total Quantity 13,050,213 ozs.

1857. Payable gold found at Collingwood.
1861. Rush to Gabriel's Gully.
1864. Gold found on West Coast.
1867. Gold discovered at the Thames.
1872. Gold discovered at Reefton.



Of the total amount of gold entered for duty for exportation from 1857 to 31st December 1895, the produce of the various goldfields was:

	OZS.	VALUE £.
Auckland	1,940,147	7,316,702
Nelson	249,075	984,618
Marlborough	83,724	326,052
West Coast	5,581,129	22,177,748
Otago	5,195,817	20,544,646
Wellington	273	1,044
Canterbury	48	192
Totals	13,050,213	51,351,002

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many of the miners do not depend entirely on mining, but employ a part of their time in farming and other pursuits.

The total quantity of gold entered for export during the years ending 31st March, 1895, and 31st March, 1896, for the several districts, and the total quantity and value of the gold exported from the colony from the 1st January, 1857, to the 31st March, 1896, are shown hereunder, but this does not necessarily show the whole of the gold produced, as no doubt much has been taken out of the colony from time to time by people who have evaded the duty, and a good deal has been used for making jewellery and ornaments:—

TABLE SHOWING THE QUANTITY AND VALUE OF GOLD ENTERED FOR EXPORTATION FROM NEW ZEALAND FOR THE YEARS ENDING THE 31ST MARCH, 1895 AND 1896, AND THE TOTAL QUANTITY AND VALUE FROM JANUARY, 1857, TO 31ST MARCH, 1896.

District.	Year ending 31st March, 1896.		Year ending 31st March, 1895.		Increase for Year ending 31st March, 1896.	Total Quantity and Value from January, 1857, to 31st March, 1896.	
	Quantity.	Value.	Quantity.	Value.			
	Oz.	£	Oz.	£	Oz.	Oz.	£
Auckland ..	117,029	450,829	58,029	228,059	59,000	1,965,009	7,410,433
Wellington ..	..	..	..	..	..	188	706
Marlborough	3,173	12,681	1,911	7,626	1,262	84,202	327,962
Nelson ..	3,813	14,007	1,633	6,059	2,180	250,428	989,609
West Coast ..	89,721	358,870	85,015	339,731	4,706	5,606,801	22,280,426
Canterbury ..	..	..	..	..	..	48	192
Otago ..	88,954	359,694	76,393	308,070	12,561	5,219,939	20,643,176
Totals ..	302,690	1,196,081	222,981	889,545	79,709	13,126,615	51,652,504

It will be seen from the above table that there was last year a very considerable increase in the yield of gold, being no less than 79,709oz., or 35·75 per cent. on the figures for the preceding twelve months. This improvement was not confined to a portion of the colony, as each gold-mining district shows an increased output. The Auckland District, however, claims the bulk of the increase, viz., 59,000oz., or over 101 per cent. more than its yield for 1894–95. This is attributable to the recent large influx of foreign capital, which has given a great impetus to gold-mining operations in that district.

Of the total quantity of gold entered for exportation last year Auckland contributed 38·67 per cent.; Marlborough, 1·04 per cent.; Nelson, 1·26 per cent.; West Coast, 29·64 per cent.; and Otago, 29·39 per cent.

During the past year the Kapanga Company's shaft at Coromandel was sunk to test the value of the stone at a lower level, and at a depth of 930ft. (the greatest yet reached in New Zealand) a quartz vein was discovered containing payable gold. This

discovery has imparted confidence in the permanency of the reefs and their contents at the deeper levels.

In order to keep the mines at the Lower Thames free from water a contract has been entered into by an English company for the erection of a pumping plant capable of lifting 2,000 gallons of water a minute from a depth of 2,000ft., which will enable all the owners of mines on the foreshore, or seaward, side of what is locally known as the "Moanataiari Fault," to conduct their operations at greater depths than could hitherto be reached.

Quartz-mining on the west coast of the South Island is also attracting the attention of capitalists, and numerous properties are now being acquired in that portion of the colony.

In the Otago, Reefton, and Nelson districts the gold in the reefs generally occurs in a fairly free-milling state, presenting little difficulty in its recovery. In the Hauraki goldfields, however, only a small proportion of the gold is free-milling, the remainder existing in what is known as a refractory state—that is, the gold occurs either in so finely divided a form that the ordinary methods of amalgamation fail to recover a payable percentage, or it is associated with, or entangled in, base metallic minerals which necessitate the adoption of scientific, and often costly, methods of treatment. In these goldfields the successful use of the cyanide process is steadily extending, with the result that many ores that formerly were worked at a loss by amalgamation processes now yield regular returns on the capital invested.

Indeed, the cyanide process is the most noteworthy improvement as yet introduced in the treatment of gold- and silver-bearing ores. It is particularly suitable where the gold is found in the ore in fine particles; whereas, if the gold be at all coarse, cyanide will do no more than cleanse and brighten its surface and render it fitter for amalgamation. About seventy-one per cent. of the bullion produced in the North Island last year was obtained by this treatment. The ore is dry-crushed, and the dust passed through a screen. The pulverised ore is then emptied into a vat and covered with a cyanide solution. The gold in the ore is dissolved by the cyanide, and, in order to separate the two, the liquor is leached off and run into a trough containing zinc turnings, where the action of the zinc precipitates the gold in a fine powder. The tailings from the leaching-vats are run over tables covered with copper-plates coated with quicksilver, and any particles of gold remaining in the ore are by this means arrested on the plates. It was at one time thought that dry-crushing would be a very expensive mode of reducing the ore, but the Waihi Company have proved the contrary. The cost of drying and crushing ready for the leaching-process is under 6s. a ton, and more gold is obtained in this way than is yielded by wet-crushing. It is found that in the latter process much of the precious metal is carried off with the water and does not remain in the tailings.

In recent experiments bromine and iodine have been used in con-

junction with cyanide, with the two-fold result, it is said, of hastening the dissolution of gold and of saving some of the loss in cyanide. Seaweed has also been tried, and is reported to have a similar effect. In all likelihood, therefore, the method of treatment will one day be rendered at once cheaper, speedier, and more thorough than it is at present.

Comparing the cyanide process with that formerly used, the manager of the Waihi Mine states that in place of getting 64 per cent. of gold, and 31 per cent. of silver, his average is now about 91 per cent. gold, and nearly 48 per cent. silver.

The two main obstacles in the way of the process are—first, the difficulty of reducing the base metals found in gold- and silver-bearing ores, of which copper and antimony are the most refractory; second, the trouble experienced in leaching ore in a slimy state, as the slime absorbs the cyanide solution, and is thereby enriched with gold. It then sets so close and compact that the gold solution cannot be filtered.

In the *Gazette* of 11th July, 1895, the Department of Industries and Commerce gave notice that a bonus of £1,000 would be paid under certain conditions for the erection of a plant and the manufacture in New Zealand of the first 200 tons of crude cyanide of potassium from colonial produce. The plant to be capable of turning out annually at least 70 tons, containing not less than 70 per cent. of potassium cyanide.

In the last Statement of the Minister of Mines it is reported that the steady returns obtained of late from the leading mines have directed attention to the mineral resources of the colony, and a demand has set in for property in New Zealand mines as an investment for foreign capital. As a natural result large areas of new ground, and mining properties partially developed and then abandoned, have been taken up, with the view of carrying on more extensive operations than formerly. Every encouragement in the matter of extended areas and security of title has been afforded to companies willing to carry on prospecting in a systematic manner; but, at the same time, safeguards have been provided to prevent large areas of mineral lands being held for purely speculative purposes. In past years many mining properties were abandoned, and often unjustly condemned as worthless, when only partially and imperfectly prospected, chiefly through an insufficiency of capital. During the present revival, capital to prospect many of these properties, as well as new areas, will doubtless be forthcoming if the owners are fair and reasonable in their demands. With capital for development, and the employment of new processes of treatment, gold-mining is rapidly becoming a permanent industry of great value to the colony.

The working of quartz mines and deep alluvial drifts necessitates a large outlay of money before returns can be expected, and can only be undertaken when capital is available. In the case of quartz mines, the reef must be sufficiently opened to ascertain the value

and extent of the ore-reserves preparatory to the erection of reduction machinery, which must be constructed on the most modern principles to insure efficiency and economy in the handling and treatment of large bodies of ore.

The introduction of capital will have the effect of enabling the claims not only to be worked at greater depths than heretofore, but they will also be worked in a more systematic and economical manner. Modern machinery and appliances will be introduced and erected for the reduction and treatment of auriferous ores, and it is expected that a far larger percentage of the gold will be recovered than has been the case in the past.

The improved appliances introduced in dredging and hydraulic sluicing machinery have made it possible to work with profit alluvial ground and drifts that a few years ago were too low-grade to handle remuneratively.

In the successful working of alluvial drifts containing only a few grains of gold to the ton or cubic yard, a large and constant supply of water is of primary importance, and to secure this the construction of expensive races must be undertaken as the initial step towards systematic development.

In the colony there are large areas covered with auriferous drifts which will prove remunerative if a sufficient quantity of water can be obtained to work them on an extensive scale, and the number of men who can be profitably employed in alluvial workings will always be in proportion to the quantity of water available.

The deep leads of the West Coast are now coming into prominent notice, and, with systematic working and careful management, promise to develop into paying concerns.

The success that has attended the liberal expenditure of capital in developing mines acquired by English and other capitalists has greatly stimulated prospecting operations all over the colony, and there is at the present time every reason to expect a prosperous future for the gold-mining industry.

RESULTS OF QUARTZ-MINING IN NORTH ISLAND FOR YEAR ENDED 31ST MARCH, 1896.

County.	1895-96.						
	Number of Men employed.	Quartz crushed.	Mullock crushed.	Gold obtained.	Tailings treated.	Gold obtained.	Estimated Value.
		T. cwt. lb.	Tons.	Oz. dwt.	Tons.	Oz. dwt.	£ s. d.
Coromandel ...	1,045	18,034 4 82	45	44,852 12	8,830	3,533 15	138,897 7 2
Thames ...	677	29,976 7 33	1,497	23,042 18	13,550	2,191 13	63,913 2 6
Ohinemuri ...	1,721	45,284 0 0	...	123,198 3	11,724	24,301 10	174,355 4 0
Piako ...	36	120 0 0	...	153 3	54	14 18	941 1 2
Totals (1895-96)	3,482	93,414 12 3	1,542	191,246 16	34,158	30,041 16	378,106 14 10
" (1894-95)	1,422	66,998 15 91	11,938	134,701 2	37,160	21,996 14	261,746 0 0

RESULTS OF QUARTZ-MINING IN SOUTH ISLAND FOR YEAR ENDED 31ST MARCH, 1896.

District.	Number of tons of Quartz crushed.	Gold obtained.	Estimated Value.
		Oz. dwt.	£ s. d.
Marlborough	..	..	..
Nelson	Not given	225 0	866 5 0
West Coast	31,986	17,569 0	68,080 0 0
Otago	11,679	5,562 5	21,545 0 0
Totals for 1895–96	43,665	23,356 5	90,491 5 0
„ 1894–95	55,339	24,744 5	96,503 10 0

NOTE.—The information from which the above Table is compiled not being quite complete, the return of gold shown is no doubt somewhat less than the real yield.

Coal.

The vast extent of coal-measures in New Zealand will make coal-mining one of the largest industries in the colony, especially on the west coast of the South Island, where bituminous coal exists equal, if not superior, to coal of the same class in any part of the world.

So long, however, as the harbour-works on that coast are unfinished, the output of coal must be limited by the requirements of the colony, as it is impossible to export at a profit save by shipping large quantities on one bottom, and in the present state of the harbours this cannot be done.

The harbour-works at Westport promise to be a complete success. Before these works began, the usual depth of water on the bar was from 9ft. to 14ft., and since the completion of the works the usual depth is from 18ft. to 20ft. The internal works for deepening and maintaining the deep water in the berthages and fairway inside the bar consist of half-tide training walls, to extend for a total length of 9,850ft., now under construction. The completion of these walls, with proposed dredging, is expected to maintain a greater depth in the fairway of the river, and a greater width of deep water for swinging vessels.

At Greymouth two breakwaters have been constructed at the mouth of the river to deepen the channel at the entrance, and enable larger steamers to enter. These, on the recommendation of the late Sir John Coode, have been carried out—the north breakwater 1,125ft., and the south breakwater 3,392ft., into the sea, to confine the river and direct the current square on to the bar. There are also internal training-walls constructed. These works have so far been perfectly successful; they have really done somewhat more than was expected of them. Prior to their initiation there was seldom more than 10ft. of water on the bar, and the channel was tortuous and constantly changing its position; now the channel is

straight and permanent, and for the most time it has 25½ft. at high-water springs, and 8ft. to 16ft. at low-water springs. The average depth at high-water on the bar during the year 1892 was 18ft. 10in., in 1893 19ft. 7in., and in 1894, 20ft. 7in.

The progressive increase in the output of coal from 1878 to the end of 1895 is shown below:—

Year.	Raised in the Colony.		Imported.	Total raised in the Colony, and imported, per Annum.	Exported.	Total Consumption of Coal within the Colony.	Yearly increase in Consumption within the Colony.
	Total.	Yearly Increase.					
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1878 ..	162,218	..	174,148	336,366	3,921	332,445	..
1879 ..	231,218	69,000	158,076	389,294	7,195	382,099	49,654
1880 ..	299,923	68,705	123,298	423,221	7,021	416,200	34,101
1881 ..	337,262	37,339	129,962	467,224	6,626	460,598	44,398
1882 ..	378,272	41,010	129,582	507,854	4,245	503,609	43,011
1883 ..	421,764	43,492	123,540	545,304	7,172	538,132	34,523
1884 ..	480,831	59,067	148,444	629,275	6,354	622,921	84,789
1885 ..	511,063	30,232	130,202	641,265	2,371	638,894	15,973
1886 ..	534,353	23,290	119,873	654,226	2,862	651,364	12,470
1887 ..	558,620	24,267	107,230	665,850	12,951	652,899	1,535
1888 ..	613,895	55,275	101,341	715,236	27,678	687,558	34,659
1889 ..	586,445	-27,450*	128,063	714,508	39,290	675,218	12,340
1890 ..	637,397	50,952	110,939	748,336	33,404	714,932	39,714
1891 ..	668,794	31,397	125,318	794,112	29,093	764,019	49,087
1892 ..	673,315	4,521	125,453	798,768	28,169	770,599	6,580
1893 ..	691,548	18,233	117,444	808,992	24,288	784,704	14,105
1894 ..	719,546	27,998	112,961	832,507	25,449	807,058	22,354
1895 ..	740,827	21,281	108,198	849,025	26,151	822,874	15,816

It will be seen from the above that there has been a steady increase in the output of coal from the mines in the colony, year after year, since records have been kept by the Mines Department—with the exception of 1889. The yearly increase in output is principally due to the growing demand for consumption within the colony. During a period of seventeen years the consumption of coal in New Zealand has increased to the extent of 490,429 tons per annum, showing that new industries are quickly springing up, requiring fuel for generating motive-power.

The total output from the mines last year was 740,827 tons, as against 719,546 tons for 1894, an increased output of 21,281 tons. The coal imported from other countries was 108,198 tons, against 112,960 tons in 1894, a decrease in the importation last year of 4,762 tons. The imports were 6,048 tons from the United Kingdom, 102,145 tons from New South Wales, and 5 tons from Tasmania. The total export of coal was 92,744 tons, of which 85,987 tons was colonial produce, and 6,757 tons imported coal from other countries. Of the quantity of coal exported 66,593 tons was for

* Decrease.

coaling direct steamers trading between the colony and the United Kingdom, and has been treated as coal consumed within the colony, these steamers trading wholly between New Zealand and Great Britain. Taking, therefore, the output from the mines and the coal imported, there is a total of 849,025 tons, of which 26,151 tons was exported, leaving the consumption within the colony last year 822,874 tons, as against 807,058 tons for 1894, an increased consumption of 15,816 tons.

The largest increase last year was in the Kawakawa and Hikurangi districts—namely, 21,076 tons. This was due entirely to the workings of the Hikurangi Coal Company's mine being more developed, the output last year being 21,257 tons. There was also an increased production from the mines in the Waikato district of 14,150 tons, and from the mines in the Whangarei district of 4,245 tons. The latter is attributable to the development of the Kiripaka Mine, at Ngunguru. An increased output from the mines in the Malvern district of 2,830 tons is also shown, but there was a decline in other places, the largest falling off being in the Westport and Greymouth districts—8,349 tons and 5,581 tons respectively.

The mines showing the largest output are: The Coalbrookdale, 183,745 tons; the Brunner, 99,609 tons; Kaitangata, 63,857 tons; Blackball, 43,055 tons; Taupiri Extended, 40,160 tons; Westport Cardiff, 32,702 tons; Hikurangi, 21,257 tons; Shag Point, 17,418 tons; Taupiri Reserve, 17,135 tons; Castle Hill, 16,365 tons; Walton Park, 16,080 tons; Allandale, 12,238 tons; Nightcaps, 11,309 tons; and Ngunguru, 10,996 tons: the output from all the other mines being under 10,000 tons.

The quantities of coal produced in each district are as under:—

Name of District.	Output of Coal.		Increase or Decrease.	Approximate total Output of Coal up to the 31st December, 1895.
	1895.	1894.		
	Tons.	Tons.	Tons.	Tons.
Kawakawa and Hikurangi ..	44,580	23,504	+21,076	867,152
Whangarei, Kamo, Ngunguru, and Whauwhau	20,872	16,627	+ 4,245	336,662
Waikato	69,751	55,601	+14,150	837,026
Mokau	535	522	+ 13	8,562
Pelorus	..	..	..	711
West Wanganui	1,615	2,173	- 558	48,354
Westport	223,123	231,472	- 8,349	2,081,716
Reefton	4,018	3,982	+ 36	64,012
Greymouth	142,664	148,245	- 5,581	2,129,362
Malvern	11,481	8,651	+ 2,830	316,261
Timaru	341	2,105	- 1,764	10,554
Otago	182,331	185,032	- 2,701	2,918,191
Southland	39,516	41,632	- 2,116	338,659
Totals	740,827	719,546	+21,281	9,957,222

The following table, constructed from "Laboratory Reports of

the Geological Survey" (Hector) gives the composition of samples of New Zealand coals freshly taken from the principal mines:—

Number.	Description.	Locality.	Analysis.				Evaporative Power.*	
			Fixed Carbon.	Hydrocarbon.	Water.	Ash.	1.	2.
1	Anthracite ..	Acheron, Canterbury ..	84·12	1·96	1·80	12·12	10·93	18·50
2	Bituminous ..	Coalbrookdale ..	74·83	20·50	1·16	3·51	9·70	16·45
3	" ...	"	70·00	22·15	2·52	5·33	9·10	15·40
4	" ..	Banbury	69·97	25·71	0·99	3·33	9·09	15·38
5	Altered brown coal	Malvern Hills ..	68·54	19·89	4·15	7·42	8·27	12·50
6	Bituminous ..	Tyneside	65·59	29·18	0·82	4·41	8·52	13·55
7	Glance coal ..	Rakaia Gorge ..	64·51	21·27	6·76	7·46	8·30	13·20
8	Bituminous ..	Wallsend	62·87	31·64	1·66	3·83	8·17	13·82
9	" ..	Grey River	62·37	29·44	1·99	6·20	8·01	13·22
10	Pitch coal ..	Kawakawa	61·16	28·00	2·51	8·33	7·95	12·55
11	Bituminous ..	Preservation Inlet ..	60·88	28·60	4·33	6·19	7·91	12·80
12	Pitch coal ..	Blackball, Grey River	60·20	29·97	8·01	1·82	7·82	12·20
13	Bituminous ..	Mokihinui	59·75	32·14	3·97	4·14	7·76	11·80
14	" ..	Coalpit Heath ..	58·81	38·98	1·02	1·19	7·64	12·96
15	" ..	Mokihinui	57·92	34·94	3·96	3·18	7·50	12·75
16	" ..	Brunner Mine ..	56·62	35·68	1·59	6·11	7·36	12·46
17	" ..	" ..	56·21	37·73	1·50	4·56	7·30	12·36
18	" ..	Westport	56·01	37·17	2·60	4·22	7·28	12·30
19	" ..	Mokihinui	55·59	38·86	3·16	2·39	7·20	12·22
20	" ..	Brunner	54·16	35·85	2·50	7·49	7·04	11·91
21	Altered brown coal	Malvern Hills ..	53·29	32·04	12·65	2·02	6·92	11·50
22	Bituminous ..	Wallsend	53·10	35·47	1·41	10·02	6·90	11·68
23	" ..	Otamataura Creek ..	52·89	36·63	2·19	8·29	6·90	11·70
24	" ..	Near Cape Farewell ..	51·37	38·72	4·38	5·53	6·31	11·60
25	Pitch coal ..	Kawakawa	50·15	42·63	4·18	3·04	6·50	11·80
26	Glance coal ..	Whangarei	50·11	38·68	8·01	3·20	6·50	11·75
27	Pitch coal ..	Kamo	50·01	37·69	9·61	2·69	6·50	11·17
28	Brown coal ..	Malvern Hills ..	49·99	35·42	11·79	2·80	6·49	10·90
29	"	Fernhill	49·95	36·95	12·00	1·10	6·49	10·99
30	" ..	Allandale	47·31	34·26	12·41	6·02	6·15	10·96
31	" ..	Kaitangata	46·48	33·48	14·66	5·38	6·04	10·22
32	" ..	Shag Point	46·21	32·65	16·02	5·12	6·00	10·16
33	" ..	Homebush	44·92	36·00	15·83	3·25	5·83	9·87
34	Pitch coal ..	Hikurangi, Whangarei	44·50	47·00	5·99	2·51	5·78	9·79
35	Brown coal ..	Hokonui	44·28	38·22	16·50	1·00	5·75	9·77
36	" ..	Kaitangata	44·11	38·32	15·44	2·13	5·74	9·96
37	" ..	Nightcaps	43·62	38·68	18·33	4·37	5.67	9·59
38	Pitch coal ..	Shag Point	43·19	30·05	15·82	10·94	5·61	9·52
39	Brown coal ..	Springfield	42·68	33·66	18·65	5·01	5·55	9·38
40	" ..	Orepuki	42·64	36·26	14·44	6·66	5·54	9·38
41	" ..	Kaitangata	38·29	32·43	17·50	11·78	4·87	8·32
42	" ..	Shag Point	35·76	30·86	13·22	20·16	4·64	7·85
43	" ..	Allandale	34·72	41·43	18·99	4·86	4·51	7·63
44	*Pitch coal* ..	Grey River	34·72	56·48	6·20	2·60	4·51	7·63
		FOR COMPARISON.						
	Newcastle, N.S.W.	Best	58·33	34·17	1·83	5·67	7·50	12·82
	"	Worst	53·34	26·66	3·33	16·67	6·90	11·72

*The second column headed "Evaporative Power" is obtained by the use of a multiple computed from the results of Professor Liversedge's experiments upon the coals of New South Wales. The multiple used for the first column is the one which has long been generally used for computing the evaporative power of coals; but, to prevent any unfair and prejudicial comparison of our coals with those of New South Wales, the second column is given.

As regards the quality of the coal, it cannot be surpassed. The late Sir John Coode, in his presidential address to the Institute of Civil Engineers, London, stated: "The bituminous coal found on the west coast of the South Island is declared by engineers to be fully equal, if not superior, to the best description from any part of the world." The quantity of each class of coal produced in 1894 and 1895 was:—

Class of Coal.	Output of Coal.		Increase or Decrease.	Approximate total Output of Coal up to the 31st December, 1894.
	1895.	1894.		
	Tons.	Tons.	Tons.	Tons.
Bituminous	429,981	418,589	+11,392	5,168,048
Pitch	104,566	102,389	+ 2,177	1,540,540
Brown	180,870	170,815	+10,055	2,932,663
Lignite	25,410	27,753	− 2,343	315,971
Totals	740,827	719,546	+21,281	9,957,222

It has been computed that to deliver coal at the pit-mouth costs in labour 6s. a ton. The number of men employed in all the coal-mines last year was 1,799, and the output of coal, 740,827 tons: the average earning per man would thus be £123 10s. 9d. per annum, or about £2 7s. 6d. per week.

Other Metals or Minerals.

Very little has been done in the colony to prospect and develop mines other than for gold and silver. The only exports last year of metalliferous products, excluding gold and silver, were 54 tons of antimony-ore, 210 tons of manganese-ore, and 62 tons of mixed minerals, representing an aggregate value of £2,891.

Kauri-gum.

The quantity of kauri-gum exported last year was 7,425 tons, as against 8,338 tons for 1894. Although 913 tons less were exported in 1895, the value increased by £14,199. Last year's produce (£418,766) gave an average value of about £56 8s. per ton, while for 1894 the average was £48 10s. 5d. per ton.

Petroleum.

Boring for petroleum is still being carried on near New Plymouth. A little oil was found in the bore first put down close to the break-water, but sea-water came in, and the work had to be abandoned. Recently a new bore, to a depth of 1,675ft., has been put down a little nearer the town. No oil of any consequence has yet been struck. There are, however, indications that petroleum will be found, but whether it will be obtained in payable quantities time alone will determine.

MANUFACTORIES, ETC.

Full and new information as to the manufactories and works in the colony is being compiled from the Census Industrial Statistical Returns; but this is not yet ready for publication, and will therefore be circulated in supplementary form. The Year-book for 1895 contained particulars as to the industries in operation at the time of the Census of 1891.

LAW AND CRIME.

Civil Cases.

Sittings of the Supreme Court are held for trial of civil cases at Auckland, Gisborne, New Plymouth, Napier, Wellington, and Wanganui, in the North Island; and at Blenheim, Nelson, Hokitika, Christchurch, Timaru, Oamaru, Dunedin, and Invercargill, in the Middle Island.

The number of writs of summons issued in the Supreme Court in 1894 was 664, against 741 in 1893, and 717 in 1892. The number of civil cases tried decreased from 156 in 1893 to 132 in 1894. Of these, 21 were tried before common juries, 14 by special jury, and 97 by Judge without jury. The total of amounts for which judgments were recorded in 1894 was £52,772. There were 107 writs of execution issued during the year.

One hundred and six cases were commenced at sixteen District Courts in 1894. Seventeen of these cases were tried before juries, and 57 before a Judge only, making a total of 74 cases tried. Thirty cases lapsed or were discontinued, and 2 remained pending. The total of amounts sued for was £15,305, and judgments were recorded for £4,160. Before the Magistrates' Courts 24,890 cases were tried, against 21,142 in 1893; the aggregate sum sued for being £327,817, and the total for which judgment was given £190,994.

Two Crown (criminal) cases were reserved from the Superior Courts and brought before the Court of Appeal in 1894. The convictions were both affirmed. There were appeals from 18 civil cases, of which 7 were allowed and 9 dismissed. Judgments were given on 3 other cases removed to the Court of Appeal.

Bankruptcy.

The petitions in bankruptcy during 1894 numbered 626, of which 558 were made by debtors and 68 by creditors. This number is 142 in excess of the petitions for the preceding year.

Of the bankruptcies in 1894, in 28 cases the liabilities were under £50; in 99, from £50 to £100; in 202, from £100 to £250; in 123, from £250 to £500; in 89, from £500 to £1,000; in 48, from £1,000 to £2,000; in 18, from £2,000 to £5,000; and in 5, £5,000 and upwards.

The following gives the number of petitions, the total amount of the unsecured assets, the amount of debts proved, and the

amount paid in dividends and preferential claims for the past nine years :—

Year.	No. of Petitions in Bankruptcy.	Debtors' Statements of Assets, excluding Amounts secured to Creditors.	Amounts realised by Official Assignees.	Amount of Debts proved.	Amounts paid in Dividends and Preferential Claims.
		£	£	£	£
1886 ..	1,089	415,953	128,370	566,291	102,966
1887 ..	1,036	311,745	135,633	503,759	109,255
1888 ..	881	252,322	98,213	571,741	79,843
1889 ..	724	441,874	187,048	755,165	95,032
1890 ..	652	262,733	112,951	381,124	122,276
1891 ..	605	141,970	84,341	302,712	72,571
1892 ..	507	122,049	66,497	238,953	43,661
1893 ..	484	111,483	68,843	464,273	37,721
1894 ..	626	187,785	85,538	310,077	70,888

A special article on the present bankruptcy law of New Zealand was printed in the Year-book of 1894. Reference is made in it to a mode of private assignment which has come into such frequent use as to prevent conclusions being drawn from a comparison of the figures above given.

Divorce.

The petitions in 1894 under "The Divorce and Matrimonial Causes Act, 1867," were 29 in number—14 fewer than in 1893: 26 were for dissolution of marriage, and 3 for judicial separation; 20 decrees for dissolution of marriage were granted. The proceedings under the Act for the past eight years were as follows :—

Year.	Petitions for		Decrees for	
	Dissolution of Marriage.	Judicial Separation.	Dissolution of Marriage.	Judicial Separation.
1887	26	6	16	1
1888	35	3	32	..
1889	26	7	17	1
1890	24	8	21	3
1891	31	5	20	3
1892	30	8	18	1
1893	34	9	25	1
1894	26	3	20	4

The petitions for dissolution of marriage amounted on the average for the eight years to 6·22 in every 1,000 marriages, and the decrees for dissolution to 4·78.

The proportion of petitions and decrees for dissolution of marriage

to the number of marriages is higher in New Zealand than in England and Wales, but lower than in New South Wales or Victoria. The proportion in every 1,000 marriages for these countries is as follows:—

Country.	Petitions for Dissolution of Marriage.	Decrees for Dissolution of Marriage.
New Zealand (1894)	6·22	4·78
England and Wales	1·88	0·95
New South Wales (1893) ..	54·72	39·36
Victoria (1893)	17·70	12·13

In 1889 an Act was passed in Victoria to allow of divorces being granted for wilful desertion, habitual drunkenness with cruelty or neglect, imprisonment under certain circumstances of either party, and adultery on the part of the husband. This multiplication of the causes for divorce has largely increased the proportion of decrees in that colony.

An Act of a similar tenor was passed in New South Wales in 1891, and brought into working in August of the following year, with the result that the number of decrees (*nisi*) of divorce increased from 66 in the year 1891 to 102 in 1892, and 305 in 1893.

Criminal Cases.

In respect of criminal statistics New Zealand compares favourably with the colonies of Australia, as will be seen on reference to the following figures, taken from the Victorian Year-book for 1894:—

1892.	Proportion per 1,000 of Population of		Proportion per 10,000 of Population of	
	Apprehensions and Summonses.*	Summary Convictions.	Commitments.	Convictions after Commitment.
Queensland	42·17	32·74	10·82	4·88
New South Wales ..	65·82	47·77	11·95	7·59
Victoria	48·72	33·26	9·82	6·53
South Australia ..	23·79	20·17	5·74	2·72
Western Australia ..	99·57	63·90	16·61	10·36
Tasmania	41·07	31·54	7·00	2·81
New Zealand (exclusive of Maoris)	27·39	20·69	5·40	2·80

Judging by the number of summary convictions in 1892, the amount of crime in New Zealand appears to have been at that time proportionately less than in any one of the Australian Colonies excepting South Australia. The ratio of convictions after commitment was somewhat higher than in South Australia, but lower than in any other colony.

* Not including civil cases

The number of charges heard before the Magistrate's Courts in 1894 was 17,805. Repeated charges against the same person are counted as distinct. In 1893 the number was 18,271; in 1892, 18,017; in 1891, 17,613; in 1890, 18,701; in 1889, 18,845; and in 1888, 19,167. Of the charges in 1894, 452 were against persons of the aboriginal native race, an increase of 113 on the number for the previous year.

If the Maoris be excluded the number of charges in 1894 is found to be 17,353, a decrease of 579 upon the number for 1893; and the proportion per 1,000 of population is 25·55, against 27·12 for 1893.

The figures, both numerical and proportional, for a series of thirteen years are subjoined:—

CHARGES BEFORE MAGISTRATES.

Year.	Number.	Proportion per 1,000 of Population.	Year.	Number.	Proportion per 1,000 of Population.
1882	22,108	43·41	1889	18,476	30·10
1883	22,511	42·52	1890	18,247	29·39
1884	23,105	41·81	1891	17,189	27·29
1885	22,709	39·61	1892	17,587	27·38
1886	21,227	36·46	1893	17,932	27·12
1887	19,924	33·41	1894	17,353	25·55
1888	18,829	30·82			

The general results shown in the next table are borne out in a most satisfactory manner by the statistics relating to prisoners in gaol (see *post*), which also show a marked decrease in crime during the last fourteen years.

The summary convictions in 1894 numbered 12,934, including 321 Maoris. 642 persons were committed for trial at the Supreme and District Courts, an increase of 122 on the number committed in 1893.

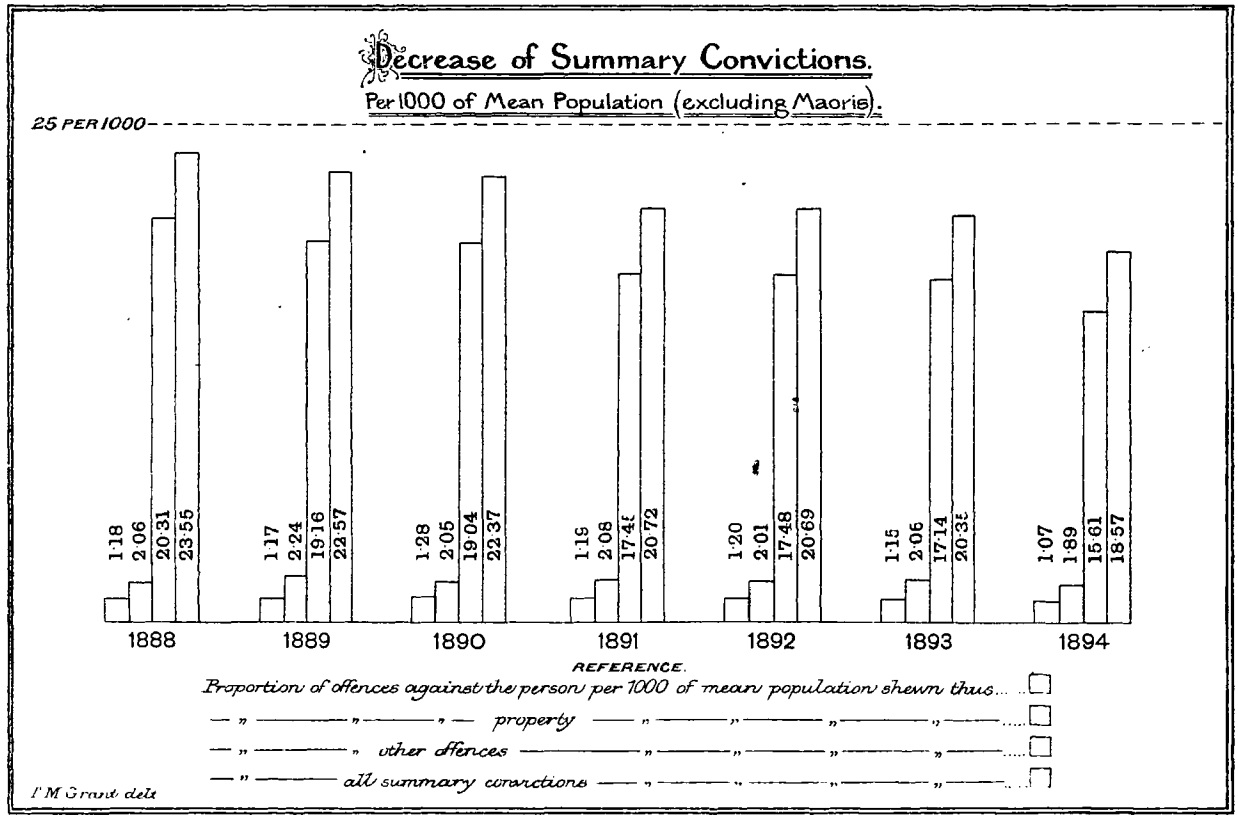
"The Justices of the Peace Act, 1882," provides that sundry indictable offences may with the consent of the accused be summarily dealt with by Magistrates. The increasing use of this provision may have affected the number of convictions in the higher Courts shown in the seven-year table on next page.

Including 24 Maoris, the convictions in the superior Courts numbered 324 (persons).

A comparison of the number of persons in New Zealand summarily convicted during seven years ending with 1894, shows a decrease in the proportion of these convictions per 1,000 of the population, not only on the total but also in regard to offences against the person, against property, and other offences taken separately. Dealing with the convictions in the superior Courts, for all offences, the number and proportion per 1,000 of population are both higher for 1894 than for any of the preceding six years; but in regard to offences against the person the proportion is less in 1894 than in 1893 or 1888, though greater than in 1890. The figures given exclude the Maoris:—

Years.	Summary Convictions. Number.	Summary Convictions. Proportion per 1,000 of Mean Population.	Convictions in Superior Courts. Number.	Convictions in Superior Courts. Proportion per 1,000 of Mean Population.
1888.				
Offences against the person ..	715	1·18	42	0·07
Offences against property ..	1,246	2·06	178	0·29
Other offences	12,298	20·31	35	0·06
Totals	14,259	23·55	255	0·42
1889.				
Offences against the person ..	716	1·17	30	0·05
Offences against property ..	1,377	2·24	152	0·25
Other offences	11,768	19·16	43	0·07
Totals	13,861	22·57	225	0·37
1890.				
Offences against the person ..	794	1·28	18	0·03
Offences against property ..	1,273	2·05	138	0·22
Other offences	11,818	19·04	36	0·06
Totals	13,885	22·37	192	0·31
1891.				
Offences against the person ..	751	1·19	31	0·05
Offences against property ..	1,312	2·08	141	0·23
Other offences	10,988	17·45	42	0·07
Totals	13,051	20·72	214	0·35
1892.				
Offences against the person ..	771	1·20	29	0·05
Offences against property ..	1,294	2·01	127	0·20
Other offences	11,225	17·48	24	0·04
Totals	13,290	20·69	180	0·29
1893.				
Offences against the person ..	760	1·15	48	0·07
Offences against property ..	1,361	2·06	174	0·26
Other offences	11,336	17·14	38	0·06
Totals	13,457	20·35	260	0·39
1894.				
Offences against the person ..	724	1·07	36	0·05
Offences against property ..	1,284	1·89	199	0·29
Other offences	10,605	15·61	65	0·10
Totals	12,613	18·57	300	0·44

From the Victorian Year-book, 1894, the following figures are extracted, showing the proportion of commitments and convictions


Decrease of Summary Convictions.
Per 1000 of Mean Population (excluding Maoris).
25 PER 1000
1·18
2·06
20·31
23·55
1·17
2·24
19·16
22·57
1·28
2·05
19·04
22·37
1·19
2·08
17·45
20·72
1·20
2·01
17·48
20·69
1·15
2·06
17·14
20·35
1·07
1·89
15·61
18·57
1888
1889
1890
1891
1892
1893
1894
REFERENCE.
Proportion of offences against the person per 1000 of mean population shewn thus
" " " property " " " "
" " other offences " " " "
" all summary convictions " " " "
T M Grant delt

to population aged fifteen years and upwards in the Australasian Colonies and the United Kingdom for the year 1891:—

PER 10,000 PERSONS LIVING, AGED FIFTEEN YEARS AND UPWARDS.

Commitments for Trial.		Convictions after Commitment.	
Western Australia	29·87	New South Wales	13·92
Queensland	23·27	Western Australia	13·54
New South Wales	22·84	Victoria	9·79
Victoria	15·03	Queensland	9·79
New Zealand	12·28	Tasmania	7·06
Tasmania	10·98	Scotland	7·03
Scotland	9·07	New Zealand	5·69
South Australia	8·80	England and Wales	4·95
Ireland	6·65	South Australia	4·63
England and Wales	6·21	Ireland	3·95

The number of summary convictions in the various Magistrates' Courts for certain of the most common offences in each of the past seven years, together with the proportion per 1,000 of the mean population (excluding Maoris) is given herewith:—

SUMMARY CONVICTIONS.

	Numbers.						
	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Assaults	633	636	705	675	656	670	647
Theft*	971	1,085	905	934	904	978	921
Drunkenness ..	5,402	5,152	5,677	5,118	5,055	5,048	4,493
	Proportions per 1,000 of the Population.						
	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Assaults	1·05	1·04	1·14	1·07	1·02	1·01	0·95
Theft*	1·60	1·77	1·45	1·48	1·41	1·48	1·36
Drunkenness ..	8·92	8·39	9·14	8·13	7·87	7·63	6·62

The proportion of assaults for 1894 is found to be less than for any one of the previous six years. In the year 1887 it was as high as 1·23 per 1,000. During the five years 1890–94 the proportion for theft remained almost without change. The record of drunkenness shows a falling rate for the five years 1890–94. It would seem that the rates given for 1888–89 are incorrect, as they were worked upon an estimate of population which the census of 1891 proves to have been exaggerated. Could the true figures be ascertained they might possibly show a steady decline throughout the period under review. The range for nine years is from 10·28 per 1,000 persons in 1886 to 6·62 in 1894.

To judge by the consumption of beer, wine, and spirits in the period 1884–1894, there has been a considerable falling-off during the last eleven years in the use of alcoholic liquors in this colony.

* Including embezzlement, receiving, and false pretences.

CONSUMPTION OF BEER, WINE AND SPIRITS PER HEAD OF POPULATION (EXCLUDING MAORIS).

	Beer. Gal.	Wine. Gal.	Spirits. Gal.
1884	8·769	0·272	0·999
1885	8·414	0·261	0·899
1886	7·861	0·212	0·820
1887	7·651	0·198	0·770
1888	7·133	0·167	0·820
1889	7·624	0·176	0·598
1890	7·899	0·184	0·693
1891	7·646	0·172	0·699
1892	7·807	0·174	0·708
1893	7·716	0·170	0·697
1894	7·391	0·144	0·648

The actual quantities of beer, wine, and spirits used in the colony during the term of ten years from 1885 to 1894, inclusive, are given previously in this report. The range is from 4,824,489 gallons of beer in 1885 to 5,019,973 gallons in 1894. Wine shows a decrease from 149,800 gallons in 1885 to 97,934 gallons in 1894; and spirits a decrease from 507,810 gallons in 1885 to 440,305 gallons in 1894. The mean population increased during the decennium from 573,362 to 679,196 persons, or at the rate of 16·71 per cent.

At the same time a comparison of the convictions for drunkenness shows that excessive drinking was not so prevalent in 1894 as it was ten years previously. And among the New-Zealand born population of European descent there is evidence of less drunkenness than among persons who have come to the colony from abroad. At the census of 1891, out of the total population of New Zealand over 15 years of age, not less than 33·89 per cent. were found to have been born here. This proportion would have slightly increased by the year 1894, when it was found that the proportion of the convictions for drunkenness of New-Zealand-born Europeans to the total convictions was only 9·43 per cent.

The prison statistics show for several years back the number of distinct prisoners received into gaol after being convicted of drunkenness. The figures for the years 1885–94 are as follow (readmissions of the same person not counted):—

DISTINCT PRISONERS CONVICTED OF DRUNKENNESS RECEIVED INTO GAOL.

1885	1,200
1886	1,077
1887	1,038
1888	938
1889	802
1890	808
1891	694
1892	638
1893	619
1894	457

Here the decrease proceeds rapidly and almost uniformly from year to year. It is true that the option of a fine is generally given to a person convicted of drunkenness, but there is nothing to show that the proportion of fines for this offence has increased of late, so that a fall in the number of distinct persons imprisoned may fairly be accepted as evidence of growing sobriety among the people.

In New South Wales and Victoria the consumption per head of alcoholic liquors is much greater than it is here. The figures are,—

	Beer. Gal.	Wine. Gal.	Spirits. Gal.
Victoria	19·36	1·01	1·12
New South Wales	10·91	0·86	1·00

In each of these colonies, as also in Queensland and South Australia, arrests for drunkenness are, in proportion to population, far more numerous than in New Zealand. The order of the colonies in this respect is as under:—

ARRESTS, ETC., FOR DRUNKENNESS IN PROPORTION TO POPULATION.

New South Wales	17·50 per 1,000
Victoria	13·67 "
Queensland	11·82 "
New Zealand	8·16 "
South Australia	8·15 "
Tasmania	6·92 "

The Native population of the colony may be regarded as stationary, and a comparison of the numbers of summary convictions by the higher and lower Courts for the last eleven years seems to lead to the conclusion that crime amongst the Maoris is not increasing. The figures, especially those relating to the convictions by the superior Courts, though small and fluctuating, are considered sufficient to justify this inference:—

SUMMARY CONVICTIONS OF MAORIS.

Year.	Number.	Year.	Number.
1884	296	1890	243
1885	238	1891	298
1886	277	1892	293
1887	279	1893	253
1888	213	1894	321
1889	221		

CONVICTIONS OF MAORIS IN SUPERIOR COURTS.

Year.	Convictions.	Number of Persons convicted.	Year.	Convictions.	Number of Persons convicted.
1884	27	22	1890	31	35
1885	15	13	1891	7	7
1886	22	27	1892	16	15
1887	11	13	1893	13	12
1888	10	10	1894	25	24
1889	10	10			

Prisoners in Gaol.

The total number of prisoners received in the different gaols of the colony during the year 1894 was 3,561, including persons awaiting trial but not convicted within the year, and counting as distinct persons repeated admissions of the same person, as well as transfers from gaol to gaol of convicts undergoing sentence. In 1893 the number received was 3,759, so that the figures for 1894 show a decrease of 198. Of 3,561 admissions for 1894, 45 were for debt, and 87 on account of lunacy; while 146 were Maoris imprisoned for various offences. If the debtors, lunatics, and Maoris be excluded, the number of persons received into gaol is reduced to 3,295, against 3,507 in 1893, a decrease of 212. In 1881, when the mean population was only 493,482 persons, the corresponding number of admissions was 4,207.

The number of persons in gaol (including Maoris) at the end of each of fourteen years is next given, with the proportion per 1,000 of the population (also including Maoris) for 1881 and 1894, showing again a great decrease in the number of prisoners :—

Prisoners in Gaol (31st December).

Year.	Undergoing Sentence.	Debtors and Lunatics.	On Remand and awaiting Trial.	Total.
1881	631	10	57	698
1882	570	8	58	636
1883	561	6	46	613
1884	560	5	64	629
1885	531	8	50	589
1886	558	6	61	625
1887	633	5	53	691
1888	605	2	34	641
1889	611	3	19	633
1890	517	3	42	562
1891	494	4	36	534
1892	433	5	38	476
1893	463	6	33	502
1894	483	4	68	555

Proportion of prisoners in confinement at end of year per 1,000 of population, including Maoris	1881.	1894.
	1·28	0·76

The Inspector of Prisons, in his report for 1895, states, in reference to the administration of the gaols, that the leading feature is that of cellular accommodation as against association, every prisoner having a cell to himself or herself instead of being confined with others.

Of the prisoners previously convicted received in 1894, 375 men and 39 women had been convicted once; 213 men and 37 women twice; 817 men and 384 women three or more times : making a total of 1,405 men and 460 women.

Of 3,561 prisoners received, 3,063 were able to read and write, 129 could read only, 330 were unable to read, and 39 were of superior education.

Besides the returns from the Prisons Department, a separate card for each admission is furnished for every gaol. Such cards as show convictions are arranged alphabetically, and where several are found referring to the same person, all are thrown out but one; then the number of cards retained equals the actual number of distinct convicted prisoners received in the various gaols during the year. In 1894 this number (excluding Maoris) was 1,955, a decrease of 156 on the number in 1893. These figures do not include children committed to the industrial schools simply on the ground that they are neglected or destitute.

The following shows the number of distinct persons (exclusive of Maoris) imprisoned in the past nine years after conviction, counting one offence only when the same person was imprisoned more than once. The proportion per 10,000 persons living is added for each year.

Distinct Persons imprisoned after Conviction.

Year.	Prisoners.	Proportion per 10,000 of Population.
1886	2,774	47·82
1887	2,639	44·25
1888	2,531	41·81
1889	2,399	39·00
1890	2,397	38·61
1891	2,113	33·55
1892	2,164	33·69
1893	2,111	31·92
1894	1,955	28·78

There has been since 1886 a decrease of 29·52 per cent. in the number of distinct convicted prisoners, and a reduction of 19·04 in the proportion to population. In New South Wales the proportion for 1892 was 75 per 10,000 persons.

It must be understood that the actual number of imprisonments was much in excess of the figures given, as many persons were several times imprisoned, either for offences differing in kind or for repetitions of the same offence. Thus, persons returned as imprisoned for larceny underwent other imprisonments for drunkenness, &c. Some returned as convicted of drunkenness were several times in gaol during the year for the same offence, or for another, such as assault, riotous or indecent conduct, &c. Often there were several charges preferred against the same person at the one time, of which the most serious followed by conviction has been selected.

The following table shows the number of distinct persons (exclusive of Maoris) received into gaol after conviction during 1894, classified according to nature of offence, religion, birthplace, and age:—

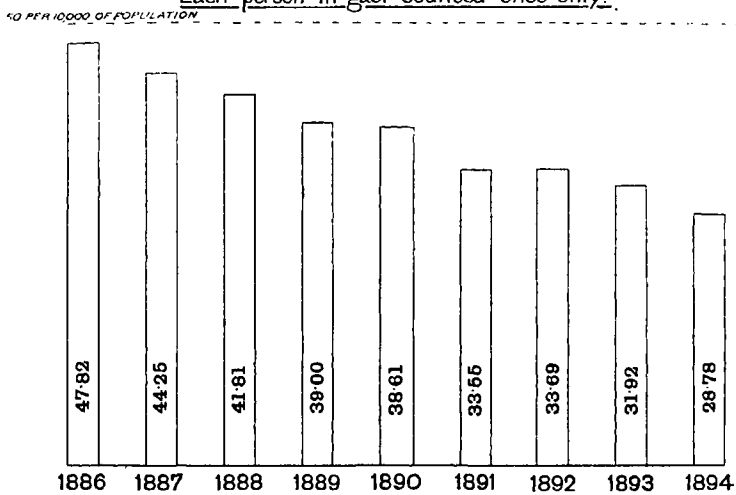
DISTINCT CONVICTED RISONERS RECEIVED INTO GAOL, 1894.

[NOTE.—In this and the following tables a prisoner convicted of more than one offence during the year is reckoned once only, under the heading of the principal offence—*e.g.*, a prisoner convicted three times of drunkenness, twice of vagrancy, and once of theft, is counted only once, under the heading "Theft." Debtors and lunatics received into gaol, and children committed to the industrial schools not convicted of any crime, are omitted.]

—	Offences against the Person.				Offences against Property.				Miscellaneous.						Totals.	
	Convicted on Indictment.		Summarily convicted.		Theft and Deceit.		Mischief.		Vagrancy.		Drunkenness.		Other Offences.			
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Religions—																
Church of England	13	1	55	3	276	16	25	3	91	33	135	33	180	9	775	98
Roman Catholic	5	...	42	3	122	7	18	2	68	39	131	48	127	8	513	107
Presbyterian	7	1	13	2	74	5	7	1	37	13	70	15	56	4	264	41
Wesleyan	1	...	7	...	17	3	2	1	4	3	9	2	14	...	54	9
Others	2	...	14	...	28	1	6	...	9	2	11	3	18	...	88	6
Totals	28	2	131	8	517	32	58	7	209	90	356	101	395	21	1,694	261
Birthplaces—																
England and Wales	4	...	41	...	163	11	15	3	66	25	116	24	128	2	533	65
Scotland	4	...	13	1	50	5	4	...	24	13	62	14	39	2	196	35
Ireland	4	...	23	4	74	6	13	1	53	24	117	44	76	8	360	87
New Zealand	7	2	27	3	155	7	14	2	31	20	27	14	91	6	352	54
Australian Colonies	5	...	6	...	32	1	2	1	12	6	10	1	22	...	89	9
Other British possessions	2	...	2	...	5	1	...	...	4	2	5	1	6	...	24	4
China	...	...	3	...	2	...	...	...	3	...	...	...	1	...	9	...
Other countries	2	...	16	...	36	1	10	...	16	...	19	3	32	3	131	7
Totals	28	2	131	8	517	32	58	7	209	90	356	101	395	21	1,694	261
Ages—																
Under 10 years	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10 and under 12 years	...	...	...	...	3	...	...	...	...	...	...	...	...	...	3	...
12 and under 15 years	...	...	...	...	3	...	1	...	...	...	...	...	5	...	8	...
15 and under 20 years	1	...	6	...	76	3	3	...	3	6	...	1	24	2	113	12
20 and under 25 years	4	1	21	2	81	6	9	2	24	10	14	7	73	1	226	29
25 and under 30 years	4	1	22	2	85	2	10	2	24	17	40	7	52	1	237	32
30 and under 40 years	6	...	44	2	118	8	14	1	49	26	93	24	105	8	429	69
40 and under 50 years	8	...	23	1	95	10	13	1	47	25	105	26	73	3	364	66
50 and under 60 years	3	...	10	...	42	2	6	1	45	5	68	29	52	5	226	42
60 years and over	2	...	5	1	14	1	3	...	17	1	36	7	11	1	88	11
Totals, 1894	28	2	131	8	517	32	58	7	209	90	356	101	395	21	1,694	261
Totals, 1893	41	5	149	5	492	49	48	14	278	93	491	128	312	6	1,811	300

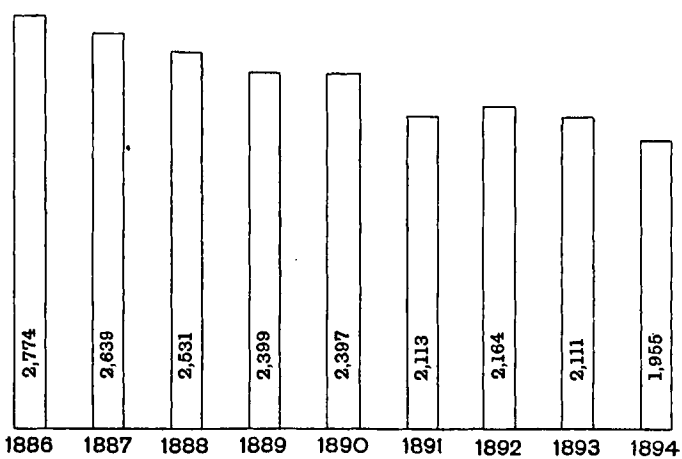
Decrease of distinct persons imprisoned: proportions to ~~1000~~ 10000 of population.

Each person in gaol counted once only.



Decrease of distinct persons imprisoned: numbers.

Each person in gaol counted once only.



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Of the above prisoners convicted, 25 (22 men and 3 women) were released upon probation under "The First Offenders' Probation Act, 1886," as against 13 in 1893, 11 in 1892, and 24 in 1891. During the year 1894, 75 persons were placed upon probation, as against 59 in 1893. Thirty-nine carried out the conditions of their licenses satisfactorily and were discharged, 2 were rearrested and committed to prison, 1 absconded, and 33 were at the end of the year still under the supervision of the Probation Officers completing their respective terms of probation. The Inspector of Prisons remarks, as to the working of the Act from the beginning, that "Of the 633 persons placed on probation since the Act came into force in October, 1886, 540 have been discharged after satisfactorily carrying out the terms of their licenses, 37 were rearrested and sentenced to various terms of imprisonment, 2 died, 16 have eluded the vigilance of the Probation Officer, and 38 remain on probation. The figures speak for themselves, and require no comment to show what a really good Act it is, and how well it is working."

The proportions of adherents of each of the four principal religious denominations in every 100 distinct convicted prisoners during the past five years are shown in the next table, with the percentages of population belonging to the same denominations at the date of the last census :—

RELIGIOUS DENOMINATIONS OF DISTINCT CONVICTED PRISONERS RECEIVED IN 1894.

Denominations of Convicted Prisoners.	Proportion per 100 of Convicted Prisoners.					Proportion of Denomination per 100 of Population at Census of 1896.
	1890.	1891.	1892.	1893.	1894.	
Church of England ..	43·18	42·17	43·21	44·48	44·66	40·27
Roman Catholic ..	32·29	33·18	33·13	33·16	31·72	14·09
Presbyterian ..	15·68	15·19	15·30	14·21	15·60	22·78
Wesleyan ..	3·09	2·84	3·65	2·99	3·22	10·44

The following are the respective proportions of the convicted prisoners received at each age-period of life to every 100 prisoners of either sex for the years 1893 and 1894 :—

AGES OF DISTINCT CONVICTED PRISONERS RECEIVED IN GAOL, 1893 AND 1894.

Age.	Male Prisoners.		Per 100 Male Prisoners.		Female Prisoners.		Per 100 Female Prisoners.	
	1893.	1894.	1893.	1894.	1893.	1894.	1893.	1894.
Under 20 years	122	124	6·74	7·32	11	12	3·67	4·60
20 and under 30 years ..	453	463	25·01	27·33	54	61	18·00	23·37
30 and under 40 years ..	479	429	26·45	25·32	88	69	29·33	26·44
40 and under 50 years ..	385	364	21·26	21·49	87	66	29·00	25·29
50 and under 60 years ..	254	226	14·02	13·34	49	42	16·33	16·09
60 years and upwards ..	118	88	6·52	5·20	11	11	3·67	4·21
Totals	1,811	1,694	100·00	100·00	300	261	100·00	100·00

Still excluding Maoris, the following are the proportions of distinct convicted prisoners, classified according to birthplace, for each of the past five years :—

BIRTHPLACES OF DISTINCT CONVICTED PRISONERS RECEIVED IN GAOL, 1894.

Birthplace.	Number of Convicted Prisoners.					Proportion of each Nationality to every 100 Prisoners.					Proportion of Persons of each Nationality to every 100 of Population, 1896.
	1890.	1891.	1892.	1893.	1894.	1890.	1891.	1892.	1893.	1894.	
England & Wales	811	708	728	700	598	33·83	33·51	33·64	33·16	30·59	16·89
Scotland ..	309	253	270	252	231	12·89	12·26	12·48	11·94	11·82	7·18
Ireland ..	633	530	528	526	447	26·41	25·08	24·40	24·92	22·86	6·55
New Zealand ..	316	273	328	355	406	13·18	12·92	15·16	16·82	20·77	62·85
Australian Colonies	95	119	79	111	98	3·96	5·63	3·65	5·26	5·01	3·10
Other British possessions	33	33	47	29	28	1·38	1·56	2·17	1·37	1·43	0·53
China ..	10	14	3	10	9	0·42	0·66	0·14	0·47	0·46	0·53
Other foreign countries	190	177	181	128	138	7·93	8·38	8·36	6·06	7·06	2·37

While the New-Zealand-born formed at the last census 63 per cent. of the whole population of the colony, they contributed in 1894 not more than 21 per cent. of the prisoners received in gaol. Of the New-Zealand-born population, however, a large number are under 15 years of age, a period of life at which there are very few prisoners; and, therefore, another comparison is necessary. It is found that the New-Zealand-born over 15 years formed 34 per cent. of the total population above 15; but, as before stated, New-Zealanders constituted only 21 per cent. of the total number received in gaols.

The table on the following page deals with New-Zealand-born prisoners only (excluding Maoris).

Here the total number of distinct prisoners received for the year 1894—406 persons—is found to be 112 in excess of the number for 1889. Of those received in 1894, 108 were under twenty years of age.

The figures tend to show that the New-Zealander is not greatly given to drunkenness, and but little addicted to deeds of violence. On the other hand, he is more given to theft and offences of a like nature. The proportion of New-Zealand-born prisoners convicted of theft and deceit was, in 1894, 39·90 per cent.; while for all prisoners the proportion was only 28·08 per cent.

DISTINCT NEW-ZEALAND BORN CONVICTED PRISONERS RECEIVED DURING THE YEAR 1894.

Offences.	Under 10.		10 and under 12.		12 and under 15.		15 and under 20.		20 and under 25.		25 and under 30.		30 and under 40.		40 and upwards.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Offences against the Person—																		
Convicted on indictment	..	..	..	..	..	..	1	..	3	1	2	1	..	..	..	..	6	2
Summarily convicted	..	..	..	..	..	..	5	..	8	1	10	2	4	..	..	..	27	3
Offences against Property—																		
Theft and deceit	..	..	3	..	5	..	58	2	35	3	35	2	14	..	5	..	155	7
Mischief	..	..	..	..	..	..	2	..	4	1	4	1	2	..	..	..	12	2
Vagrancy	..	..	..	..	..	..	1	8	15	4	8	7	3	3	5	2	32	24
Drunkenness	..	..	..	..	..	..	..	..	..	1	3	4	12	3	7	4	4	2	26	14
Other offences	..	..	..	..	3	..	19	..	27	..	24	1	16	1	5	..	94	2
Totals, 1894	..	..	3	..	8	..	86	11	95	14	95	17	46	8	19	4	352	54
Totals, 1893	1	..	1	..	10	..	76	10	78	12	74	15	42	5	25	6	307	48
Totals, 1892	1	..	1	..	15	..	78	12	78	16	45	12	45	4	18	3	281	47
Totals, 1891	1	..	2	..	14	..	69	7	70	17	26	9	31	10	14	3	227	46
Totals, 1890	6	..	5	1	20	..	63	15	85	19	41	12	28	8	10	3	258	58
Totals, 1889	2	..	4	1	15	4	62	14	59	20	42	12	37	2	15	5	236	58

, which would, of course, include those brought fo
previous year. The comparative results for a serie
n by this method are held to be more valuable
ght out by one which includes prisoners merely awe
continual repetitions of the same individuals.

Inquests.

The number of bodies on which inquests were held
including 14 Maoris. In 705 cases the bodies wer
in 219 of females. The verdicts may be classified as

Nature of Verdict.	Inquests on Perso	
	Males.	Females.
Accident	393	99
Disease and natural causes ..	226	99
Intemperance	4	..
Homicide	6	1
Suicide	58	17
Not classed	18	3
	705	219

Of the accidental deaths, drowning is still the most
verdicts show that 281 bodies were found drown
centage of 57·11 on the accidental deaths from all cau
The inquests on suicidal deaths in 1894 were in ex
nbers in 1893 and 1892. The numbers are,—

Year.	Inquests on Sui	
	Males.	Females.
1892	50	8
1893	49	15
1894	58	17

Fire Inquests.

The inquests on fires held during 1894 were 62. In
verdict was incendiarism, in four accident, and in
evidence was forthcoming.

EDUCATION.

Description of Schools.	Number of Schools.	Teachers.	Scholars.
EUROPEAN.			
Public (Government) schools (scholars other than Maoris and half-castes)	1,410	3,306	125,764
Public (Government) schools (half-castes living among Europeans)			852
Colleges, grammar, and high schools (aided or endowed)	24	182	2,454
Private schools (excluding Maori scholars) ..	302	752	14,627
Industrial schools and orphanages	8	..	719
Native village schools, European children attending	..	..	398
Private Native boarding-schools, European children attending	..	..	37
School for deaf-mutes	1	5	46
Jubilee Institute for Blind	1	3	38
Totals—Europeans	1,746	4,248	144,935
NATIVE.			
Native village schools supported by Government (excluding European children stated above) ..	65	115	2,020
Private Native boarding-schools (maintenance of scholars paid by Government)	4	3	67
Private Native boarding-schools (maintenance of scholars paid from endowments)			106
Private Native day-schools	3	4	94
Public (Government) schools, Maoris attending	..	..	576
Public (Government) schools, half-castes living as Maoris attending	..	..	108
Private schools for Europeans, Maoris attending	..	..	22
Totals—Natives	72	122	2,993

Thus at the end of 1894 there were 1,818 schools of all classes at which members of the European and Maori races were being educated. This was an increase of 59 on the number in 1893. The public primary schools numbered 1,410 in 1894, against 1,355 in 1893. The number of aided or endowed colleges, grammar, and high schools was 24, the same as in the previous year. The number of private schools from which returns were received by the Registrar-General was 302, an increase of 3. There were also 8 industrial schools and orphanages, public and private, as well as 1 school for deaf-mutes subsidised by Government, and 1 school for the blind.

The number of schools established for the education of the Native or Maori race was 72, against 69 in 1893.

Education at the public schools is free (except that, at such as are also district high schools, fees are charged for the teaching of the higher branches) and purely secular. The attendance of all children between the ages of 7 and 13 is compulsory, except when

, English grammar and composition, geography,
ntary science and drawing, object-lessons, vocal musi
ase of girls) sewing and needlework, and the prir
stic economy. Provision must also be made for the ir
litary drill of all boys in these schools.
ıe number of boys and girls of European descent,
:astes living among Europeans, on the rolls of atte
'arious schools in the last quarter of 1894 was 14
ıse on the corresponding number in 1893 of 2,539.
16 were attending the public schools, 2,454 the
mar, and high schools, 14,664 private schools, 719
s of orphanages and industrial schools, 398 attend
;e schools, 46 were deaf-mutes at the Government i
38 were at the institute for the blind.
here was an increase (exclusive of Maoris) during
532 in the number attending public schools, and a d
in the number attending private schools. The atte
olleges, grammar, and high schools, increased by 20
ber of European children at Native village schools by
Exclusive of Maoris, but including 438 male and 4
castes living among Europeans, there were 65,442
74 girls in attendance at the public primary schools
quarter of 1894, an increase on the numbers in 189
and 1,043 girls.
There were 1,358 male and 1,948 female teachers (e
sewing-mistresses) at the public schools at the end of
males, 221, and of the females, 825, were pupil-teache
Of the secondary or superior schools, 24 in number,
s only, 7 for girls only, and 9 for boys and girls. T
egular instructors in 1894 was 134, and of visitir
48. The number of pupils on the roll for the la
t was 2,454; of these, 1,449 were boys and 1,005 girls
ed with the last term of 1893, there was an increase
corresponding number of boys, and an increase of
esponding number of girls.
The New Zealand University is not a teaching bo
luates for the most part keep their terms at one or

and 10 of the females were medical students. The numbers of students attending lectures at the affiliated institutions during the year 1894–95 were as follow: At the Auckland University College, 66 matriculated and 77 non-matriculated; at Canterbury College, 185 matriculated and 141 non-matriculated; at the Otago University, 176 matriculated and 35 non-matriculated.

There were 302 private schools in the colony at the end of 1894, an increase of 3 on the number in 1893; 32 were for boys, 43 for girls, and 227 for children of both sexes. The number of pupils attending them was 14,627—namely, 6,117 boys and 8,510 girls, not counting Maoris—11 boys and 11 girls. The number of European pupils at these schools was less than in 1893 by 295. Of the private schools 117 were Roman Catholic, with an attendance of 9,953 pupils.

The following gives, for the past nine years, the number of private schools and of Europeans attending them, the number of Roman Catholic schools and pupils being also shown separately:—

Year.	Number of Private Schools.	Pupils.			Included in Previous Numbers.	
		Boys.	Girls.	Totals.	Roman Catholic Schools.	Pupils at Roman Catholic Schools.
1886	288	5,216	7,257	12,473	83	7,991
1887	299	5,771	7,616	13,387	90	8,946
1888	299	5,874	7,979	13,853	96	9,346
1889	293	5,778	7,680	13,458	95	9,024
1890	298	5,759	7,867	13,626	108	9,474
1891	281	6,234	7,908	14,142	110	10,144
1892	274	6,321	8,135	14,456	105	10,111
1893	299	6,431	8,491	14,922	111	10,263
1894	302	6,117	8,510	14,627	117	9,953

The number of children 5 to 15 years of age shown by the census of April, 1891, was 167,164, and, assuming the proportions living at the various age-periods to remain constant, we get 183,333 as the estimated number at the end of 1894. There would therefore be a proportion of 75·29 per cent. of all children from 5 to 15 years of age in attendance at school. But the census showed 8,178 children being educated by means of home tuition, most of whom would be from 5 to 15 years old. Adding these, the proportion per cent. of European children at this age-period whose education is accounted for is found to be 79·75.

The total number of children of European descent (including such half-castes as live among Europeans) known to be receiving education at school at the end of 1894 was 144,935; of these, 138,040 were from 5 to 15 years of age.

The distribution of the private schools in the various provincial districts of the colony is shown in the two following tables:—

PRIVATE SCHOOLS, 1894.—SUMMARY BY PROVINCIAL DISTRICTS.

Provincial Districts.	Number of Schools.				Number of Teachers.			Number of Scholars (exclusive of Maoris).			Daily Average Attendance.		
	Boys.	Girls.	Mixed.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Auckland	6	10	68	84	25	132	157	1,404	1,945	3,349	1,131	1,635	2,766
Taranaki	1	...	12	13	3	22	25	123	254	377	107	228	335
Hawke's Bay	4	4	7	15	13	29	42	387	435	822	355	385	740
Wellington...	6	6	36	48	43	107	150	1,139	1,634	2,773	981	1,459	2,440
Marlborough	1	2	4	7	2	8	10	125	187	312	97	146	243
Nelson	4	5	11	20	11	30	41	277	384	661	239	336	575
Westland	1	...	8	9	3	22	25	268	345	613	232	320	552
Canterbury	5	10	46	61	23	162	185	1,372	2,002	3,374	1,191	1,679	2,870
Otago	4	6	35	45	10	107	117	1,022	1,324	2,346	878	1,121	1,999
Totals	32	43	227	302	133	619	752	6,117	8,510	14,627*	5,211	7,309	12,520

* Exclusive of 23 Maoris—11 boys and 11 girls.

NOTE.—Denominational schools, such as Roman Catholic and Anglican, are included in the above as private schools. Particulars for the Roman Catholic schools in December, 1894, are as under.

SUMMARY OF ROMAN CATHOLIC SCHOOLS.

Provincial Districts.	Number of Schools.				Number of Teachers.			Number of Scholars.			Daily Average Attendance.		
	Boys.	Girls.	Mixed.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
Auckland	4	8	18	30	8	61	69	737	1,087	1,824	570	901	1,471
Taranaki	...	...	3	3	...	11	11	62	152	214	55	139	194
Hawke's Bay	1	2	4	7	3	22	25	280	359	639	255	314	569
Wellington	3	5	9	17	19	45	64	832	1,105	1,937	720	979	1,699
Marlborough	1	1	2	4	2	4	6	122	160	282	96	122	218
Nelson	2	3	4	9	1	19	20	208	324	532	174	283	457
Westland	1	...	6	7	3	20	23	261	335	596	227	313	540
Canterbury	3	4	13	20	10	66	76	868	1,243	2,111	747	1,027	1,774
Otago	3	2	15	20	9	60	69	839	979	1,818	728	801	1,532
Totals	18	25	74	117	55	308	363	4,209	5,744	9,953	3,572	4,882	8,454

The number of Native village schools at the end of 1894 either supported or subsidised by the Government was 65—three more than in 1893. In addition, there were four boarding-schools for Native children, the cost of whose maintenance was paid either by the Government or from endowments, and three private Native schools.

The number of Maori children attending schools at the end of 1894 was 2,993—namely, 1,742 males and 1,251 females. These included 241 half-castes at the Native village schools who were living as members of Maori tribes, and 108 at public European schools.

The numbers at the several schools in 1893 and 1894 were as follow:—

Schools.	Maori Children attending Schools.					
	Boys.		Girls.		Total of both Sexes.	
	1893.	1894.	1893.	1894.	1893.	1894.
At public European schools ..	377	438	229	246	606	684
At Native village schools ..	987	1,140	795	880	1,782	2,020
At subsidised or endowed boarding-schools	96	92	86	81	182	173
At private European or Native schools	65	72	38	44	103	116
Totals	1,525	1,742	1,148	1,251	2,673	2,993

There was thus in 1894 an increase of 217 in the number of Maori boys and an increase of 103 in the number of Maori girls attending school.

The number of headmasters at Native village schools at the end of the year 1894 was 54; of head-mistresses, 9; of assistants, 52; and of sewing-mistresses, 11. The salaries of head-teachers ranged from £80 to £233, and those of assistants and sewing-mistresses from £50 to such very small allowances as £4. The expenditure in 1894 was £15,389, made up as follows: Teachers' salaries and allowances, £9,778; boarding-school allowances (including scholarships) and apprenticeship, £1,647; buildings, fencing, furniture, &c., £1,899; repairs and small works, £624; books and school requisites, £354; inspection (including travelling), £842; cost of lantern-lectures, £162; sundries, £83. The net expenditure is reduced to £15,301 by a contribution of £88 from Native reserve funds.

As to the use of the magic-lantern, the Inspector remarks:—

The exhibitions given last winter have been of very marked utility. In the first place, they have in nearly every case greatly interested the older Maoris, and have made them acquainted with much that they had not previously known or suspected about Europeans—their unbounded activity, and the superiority of their mode of living. Then, the exhibitions have tended to bring the children into much closer contact with actual fact than is ever attainable by mere school instruction consisting of verbal statement and explanation—to bring them nearer to reality—and to let them actually see for themselves

that their schoolroom and its appliances, superior as they are to Maori buildir do not at all reach the higher limit of what can be done by the pakeha's wea and power and skill and enterprise. In many cases the Maoris appear to h felt that this kind of provision for their instruction and amusement is a v palpable pledge of disinterested good-will towards them on the part of Government. There is great reason to hope that the permanent arrangeme now being made for the periodical use of the magic lantern in our Nat schools will be productive of immense benefit.

The total income of the various Education Boards for the y 1894 was £445,939 17s. The grants by Government amounted £407,467 16s. 6d., an increase of £9,729 on the grants in 18 These grants consist of (1) a statutory allowance of £3 15s. child in daily average attendance, (2) a further capitation allowa of 1s. 6d. for scholarships, and (3) a varying sum for school-buildin The income from reserves amounted to £34,761 17s. 5d.

The total expenditure in 1894 amounted to £454,252 11s. 11 of which the sum of £382,154 5s. 6d. was laid out on the maint ance of the schools, £11,425 4s. 8d. used to meet expenses of Boards, £12,692 5s. 8d. spent on inspection of schools and exami tion of pupil-teachers, £44,851 19s. 7d. on school-buildings, a £3,128 16s. 6d. on miscellaneous services.

The net expenditure on Government industrial schools for 18 exceeded the corresponding amount for 1893 by about £365. T gross cost to Government was £14,602 14s. 9d.; the net co £7,160 4s. 4d.

COST OF GOVERNMENT INDUSTRIAL SCHOOLS, 1894.

School.	Gross Cost of School.	Cost of Boarding out. (Included in preceding Column.)	Recoveries.	Net Cos
	£ s. d.	£ s. d.	£ s. d.	£ s
Auckland	1,517 7 2	775 15 1	476 19 6	1,040 7
Burnham	6,353 6 3	2,816 16 2	2,992 4 1	3,361 2
Caversham ..	6,329 6 5	3,101 9 7	3,973 6 10	2,355 19
Salary and expenses of Visiting Officer ..	..	..	..	402 14
Totals ..	14,199 19 10	6,694 0 10	7,442 10 5	7,160 4

The average number of inmates of all grades belonging to th schools was 1,159. The gross cost of the maintenance of each £12 12s., and the net cost £6 3s. 6d. But the average numbe inmates maintained was 641; and if the salaries are regarded fair equivalent for the work involved in the supervision of the mates at service, with friends, &c., the gross cost per head for 641 is £19 14s. 4d.

The Government expenditure on the private industrial schoo next shown. The net expenditure is £465 in excess of the co sponding amount for the preceding year.

GOVERNMENT EXPENDITURE ON PRIVATE INDUSTRIAL SCHOOLS, 1894.

School.	Payments.	Recoveries.	Net Expenditure by Government.
	£ s. d.	£ s. d.	£ s. d.
St. Mary's, Ponsonby (Auckland)	532 10 0	33 19 3	498 10 9
St. Joseph's, Wellington ..	370 10 6	30 12 6	339 18 0
St. Mary's, Nelson	2,355 14 0	356 0 0	1,999 14 0
Totals	3,258 14 6	420 11 9	2,838 2 9

The total number of inmates of the two kinds of industrial schools is given for the years 1893 and 1894, and the variations in the numbers boarded out, in residence, or at service :—

INMATES, 1893 AND 1894.

—	Boarded out.				In Residence.				At Service, &c.				Totals.			
	Dec., 1893.	Increase.	Decrease.	Dec., 1894.	Dec., 1893.	Increase.	Decrease.	Dec., 1894.	Dec., 1893.	Increase.	Decrease.	Dec., 1894.	Dec., 1893.	Increase.	Decrease.	Dec., 1894.
Government Schools—																
Auckland	53	..	10	43	13	..	..	13	62	..	13	49	128	..	23	105
Burnham	174	..	4	170	129	..	18	111	237	26	..	263	540	4	..	544
Caversham	174	7	..	181	100	3	..	103	205	..	31	174	479	..	21	458
Private Schools—																
St. Mary's, Auckland	..	..	..	..	42	3	..	45	11	..	..	11	53	3	..	56
St. Joseph's, Wellington	4	..	..	4	50	8	..	58	2	6	..	8	56	14	..	70
St. Mary's, Nelson ..	4	..	..	4	255	8	..	263	35	20	..	55	294	28	..	322
Totals ..	409	7	14	402	589	22	18	593	552	52	44	560	1,550	49	44	1,555

The children at the deaf-and-dumb institution at Sumner, near Christchurch, were 45 in December, 1894, being 6 more than in December, 1893. The institution is under Government control. The expenditure for the year 1894 was £3,252 12s. 5d., made up as follows: Salaries of professional staff, £1,076 0s. 4d.; salaries and wages of domestic staff, £475 13s. 10d.; rent, £470; housekeeping, £879 10s. 5d.; travelling, £119 15s. 1d.; school material and appliances for technical instruction, £18 10s. 1d.; repairs, £98 8s. 10d.; sundries, £114 13s. 10d. Contributions received from parents amount to £105 4s. 7d., making the net cost £3,147 7s. 10d. The children are taught to speak with the mouth, and to read articulate speech by observing the movement of the lips. The census of 1891 showed a total number of 98 deaf-and-dumb persons under 20 years of age residing in the colony, so that more than one-third of the full number would appear to be living at the institution.

The blind pupils formerly sent to Melbourne or Sydney are now provided for in the Jubilee Institution for the Blind at Auckland.

The number at the end of the year was 23. In cases where necessity has been shown, the Education Department pays at the rate of £25 a year for each pupil, recovering what is possible from parents. The payments amounted to £500 2s. 9d., of which sum £45 13s. 4d. was recovered from parents. The number of blind persons under 20 years of age returned at the census of 1891 as living in the colony was 30.

Local Governing Bodies.

On the 31st March, 1895, there were in New Zealand 95 boroughs and 81 counties for purposes of local government. Contained within the counties were 241 road districts and 41 town districts,[1] but much of the area of the counties is outlying country not included within any road district. There were also 29 River Boards (one of which was also a Road Board), 23 Harbour Boards, 1 Drainage Board, and 6 Land-drainage Boards constituted under the Act of 1893. The full details of the rates struck by these bodies, and the receipts and expenditure of each, are given in the tables of the statistical volume for 1894, pp. 417 to 452, but are too lengthy for insertion here; summarised results only will be dealt with in this report.

The amount of direct taxation imposed on the people by these local bodies in the form of rates amounted to a gross sum of £581,868 for the year 1894–95, equivalent to an average of 17s. per head of mean European population for that year. Including licenses and other taxes, the total amounts to £676,555, or 19s. 10d. per head. The taxation levied by each class of the local bodies was as follows:—

Taxation by Local Bodies, 1894-95.

Local Bodies.	Rates.		Licenses.	Other Taxes.	Total.
	General.	Special and Separate.			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Counties* ...	138,670 16 0	32,659 8 6	20,918 3 2	12,033 7 3	204,281 14 11
Boroughs* ...	119,084 0 2	137,626 1 6	46,483 10 0	7,536 11 10	310,730 3 6
Town Boards* ...	3,255 10 7	417 8 11	4,594 0 3	279 6 9	8,546 6 6
Road Boards* ...	81,414 13 8	8,125 16 11	2,039 18 5	802 7 8	92,382 16 8
River Boards* ...	5,654 4 6	1,467 16 6	...	...	7,122 1 0
Land-drainage Boards* ...	358 6 9	...	...	...	358 6 9
Harbour Boards†	34,517 17 3	...	...	...	34,517 17 3‡
Christchurch Drainage Board†	18,616 1 0	...	...	...	18,616 1 0
Totals ...	401,571 9 11	180,296 12 4	74,035 11 10	20,651 13 6	676,555 7 7§

* For year ended 31st March, 1895.
† For year ended 31st December, 1894.
‡ Wharfage dues, charges, fees, tolls, rents, &c., amounting to £232,403 16s. 10d., have not been classed as taxation.
§ Equal to 19s. 10d. per head of the mean European population of the colony for the financial year 1894-95.

[1] One of these is the special Town District of Rotorua, constituted under "The Thermal-Springs Districts Act, 1881."

The receipts (distinguishing revenue from other sources of income) and expenditure of the various local bodies, with the amount of rates collected, and the amount of indebtedness on account of loans for each of the past fourteen years, are shown in the following table:—

LOCAL GOVERNING BODIES.—RATES, RECEIPTS, EXPENDITURE, AND LOANS, 1881 TO 1895.*

Year.	Receipts of Local Bodies.				Expenditure of Local Bodies.†	Outstanding Loans of Local Bodies (excluding Government Loans, for which see the following Columns).	Government Loans to Local Bodies.	
	Revenue.		Receipts not Revenue.	Total Receipts			Under "The Roads and Bridges Construction Act, 1882."	Under "The Government Loans to Local Bodies Act, 1886" (including Debentures under the Roads and Bridges Construction Act, converted).
	From Rates.	From Government and other Sources.						
	£	£	£	£	£	£	£	£
Year ended 31st March, 1881	249,087	814,142	889,705	1,952,934	1,871,752	3,039,807	..	..
" " 1882	297,328	694,652	419,608	1,411,588	1,637,337	3,277,584	..	..
" " 1883	327,129	600,450	311,466	1,239,045	1,397,863	3,540,046	..	..
" " 1884	398,659	744,527	331,994	1,475,180	1,499,117	3,962,330	77,439	..
" " 1885	401,393	841,895	430,561	1,673,849	1,653,706	4,313,223	123,086‡	..
" " 1886	410,639	882,618	514,728	1,807,985	1,644,706	4,943,270	134,534	..
" " 1887	434,237	790,063	992,633	2,216,933	1,885,001	5,620,747	113,072	..
" " 1888	433,832	795,067	511,594	1,740,493	1,819,787	5,812,803	18,635	191,687
" " 1889	445,929	676,428	316,139	1,438,496	1,560,605	5,892,050	10,495	273,289
" " 1890	460,303	707,725	206,688	1,374,716	1,476,540	5,978,059	9,676	319,603§
" " 1891	463,581	662,765	236,902	1,363,248	1,381,320	6,042,693	4,317	367,715
" " 1892	488,824	693,296	214,124	1,396,244	1,400,467	6,081,934	4,245	449,532
" " 1893	508,157	709,676	340,538	1,558,371	1,482,548	6,203,869	3,465	525,173
" " 1894	551,412	681,831	623,038	1,856,281	1,589,124	6,614,824	2,685	547,679
" " 1895	581,868	683,857	328,798	1,594,523	1,584,518	6,685,510	2,015	621,903

*The figures for the Drainage and Harbour Boards included in this table are for the calendar years ended three months previous to the financial years.

†Not including balances, contractors' deposits returned, amounts paid to sinking funds and for redemption of debentures.

‡On the 30th June. §In February.

The indebtedness of the local bodies, outside moneys repayable to the General Government by instalments under "The Roads and Bridges Construction Act, 1882," and moneys advanced under "The Government Loans to Local Bodies Act, 1886," has thus increased during the period included in the table from about three to more than six and a half millions sterling, and in the ten years, April, 1835, to March, 1895, from £4,313,223 to £6,685,510.

Of the total indebtedness in March, 1895, the debt of the Harbour Boards formed the largest item, £3,652,350, while the Borough Councils owed £2,757,395. It will be seen from the table following (p. 259) that the accrued sinking funds for all loans of local bodies amounted to £429,658, leaving a net indebtedness of £6,255,852, exclusive of the sums owing to the General Government, and that the total annual charge for interest and sinking fund stood at £395,192.

In a third table (p. 260) will be found a classification of the amounts raised by loan, according to the rates of interest paid, distinguishing loans raised in the colony from those raised abroad. It will be noticed that the amount raised abroad (£5,423,550) is nearly five times as great as that raised in New Zealand (£1,261,960). The lowest rate of interest paid was 3 per cent., but the large sum of £3,105,300 was raised at 5 per cent., and £2,559,780 at 6 per cent., while £218,810 bore interest as high as 7 per cent.

A summary of all the transactions for the year 1894–95 is subjoined (pp. 262–3). The total revenue of the local bodies for the financial year was £1,265,725, and they further received a sum of £328,798 which could not properly be termed "revenue," making altogether a grand total of receipts amounting to £1,594,523. The rates formed 46 per cent. of the revenue proper. Licenses, rents, and other sources yielded 42 per cent., and 12 per cent. was granted by the General Government.

The expenditure of the local bodies amounted to £1,584,518. In the counties the cost of management, including salaries, travelling-expenses, rent, printing and advertising, collection of rates or tolls, legal expenses, and sundries, was £44,082 out of a total expenditure of £415,034. The boroughs expended in the same way £52,142 out of £527,733; and the Road Boards £18,543 out of £187,226. The percentages borne by the cost of management to the total receipts and total expenditure were,—

	Cost of Management per Cent. of Total Receipts.	Total Expenditure.
Counties	10·9	10·6
Boroughs	9·3	9·9
Road Boards	9·6	9·9

LOANS OF LOCAL BODIES.—NET INDEBTEDNESS, 1895, AND ANNUAL CHARGE.

	Amount of Debentures and Stock in Circulation.	Amount of Accrued Sinking Fund.	Net Indebtedness.	Annual Charge (excluding Exchange and Commission).		
				Interest.	Sinking Fund.	Total.
	£	£	£	£	£	£
Counties	10,510	299	10,211	671	80	751
Boroughs	2,757,395	244,315	2,513,080	152,928	11,234	164,162
Town Boards	1,184	..	1,184	74	10	84
Road Boards	6,916	299	6,617	423	66	489
River Boards	42,455	5,646	36,809	2,376	859	3,235
Water-supply Board	14,700	..	14,700	765	..	765
Harbour Boards	3,652,350	160,213	3,492,137	189,055	22,651	211,706
Drainage Board	200,000	15,886	181,114	12,000	2,000	14,000
Totals	6,685,510	429,658	6,255,852	358,292	36,900	395,192
Inscribed debt of local bodies under "The Government Loans to Local Bodies Act, 1886" (including inscribed stock exchanged for debentures under "The Roads and Bridges Construction Act, 1882")	621,903	..	621,903*	..	..	36,739
Outstanding debentures under "The Roads and Bridges Construction Act, 1882"	2,015	..	2,015	..	..	686†
Totals	7,309,428	429,658	6,879,770	..	..	432,617

* Repayable by twenty-six annual instalments of £36,739, representing 5 per cent. per annum on £734,781, the amount inscribed.
† Amount for 1894-95.

Loans of Local Bodies raised within and without the Colony.

Table showing the Amount of Indebtedness of Counties, Boroughs, Town, Road, River, and Water-supply Boards, as on the 31st March, 1895, and of Harbour and Drainage Boards as on the 31st December, 1894, classified according to the Rates of Interest paid, distinguishing Loans raised in the Colony from those raised elsewhere. (See note.‡)

Loans raised in the Colony.

Local Bodies.	3 %	4 %	4½ %	5 %	5¼ %	5½ %	5¾ %	6 %	6¼ %	6½ %	7 %	8 %	Total.
	£	£	£	£	£	£	£	£	£	£	£	£	£
Counties	..	..	..	2,000	..	..	..	2,500	..	..	6,010	..	10,510
Boroughs	..	..	..	85,700	18,000	64,000	11,000*	288,695	..	3,100	136,650	600	632,745†
Town Boards ..	..	..	..	..	..	..	..	684	..	500	..	..	1,184
Road Boards ..	..	..	..	..	..	..	..	5,416	..	1,500	..	..	6,916
River Boards	..	..	..	2,500	..	..	..	11,585	3,320	2,550	1,500	..	21,455
Water-supply Board ..	..	..	..	11,700	..	..	..	3,000	..	..	..	..	14,700
Harbour Boards ..	15,650	..	10,000	503,000	..	32,000	..	3,450	..	10,000	350	..	574,450
Total in colony ..	15,650	..	10,000	604,900	18,000	96,000	11,000*	315,330	3,320	17,650	144,510	600	1,261,960†

Loans raised outside the Colony.

Boroughs	..	..	254,400	792,100	..	..	..	1,003,850	..	..	74,300	..	2,124,650
River Boards ..	..	..	..	21,000	..	..	..	..	..	..	..	..	21,000
Harbour Boards ..	..	250,000	100,000	1,687,300	..	..	..	1,040,600	..	..	..	..	3,077,900
Drainage Board ..	..	..	..	..	..	..	..	200,000	..	..	..	..	200,000
Total outside colony	..	250,000	354,400	2,500,400	..	..	..	2,244,450	..	..	74,300	..	5,423,550

Total Loans.

Counties	..	..	..	2,000	..	..	..	2,500	..	..	6,010	..	10,510
Boroughs	..	..	254,400	877,800	18,000	64,000	11,000*	1,292,545	..	3,100	210,950	600	2,757,395†
Town Boards	..	..	..	..	..	..	..	684	..	500	..	..	1,184
Road Boards	..	..	..	..	..	..	..	5,416	..	1,500	..	..	6,916
River Boards	..	..	..	23,500	..	..	..	11,585	3,320	2,550	1,500	..	42,455
Water-supply Board ..	..	..	..	11,700	..	..	..	3,000	..	..	..	..	14,700
Harbour Boards ..	15,650	250,000	110,000	2,190,300	..	32,000	..	1,044,050	..	10,000	350	..	3,652,350
Drainage Board ..	..	..	..	..	..	..	..	200,000	..	..	..	..	200,000
Total loans ..	15,650	250,000	364,400	3,105,300	18,000	96,000	11,000*	2,559,780	3,320	17,650	218,810	600	6,685,510†

* Including £2,000 at 5·7 per cent. † Including also £25,000 on which no interest was paid. ‡ Not including loans amounting to £623,918, repayable by annual instalments under "The Roads and Bridges Construction Act 1882," and "The Government Loans to Local Bodies Act, 1886."

The details of amounts received, representing Government support to the various bodies, are stated in the following table :—

LOCAL GOVERNING BODIES.—RECEIPTS FROM GOVERNMENT, 1894-95.

—	Counties.	Boroughs.	Town Boards.	Road Boards.	River Boards (excluding Inch-Clutha, also Road Board).	Land Drainage Boards.	Harbour Boards.	Totals.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Rates on Crown and Native lands	15 6 7	71 5 2	...	...	6 6 10	...	...	92 18 7
One-third receipts from land sold on deferred payment and from perpetual leases	21,837 0 9	...	129 7 6	16,215 14 8	...	...	...	38,213 2 11
One-fourth of rents from small grazing-runs ...	2,883 18 11	...	...	377 15 8	...	...	...	3,261 14 7
Goldfields revenue and gold duty	17,141 2 2	1,017 14 2	62 17 4	293 15 7	...	...	...	18,515 9 3
Subsidies under the Local Bodies' Finance and Powers Act	35,668 10 1	12,588 3 5	607 17 3	19,293 1 4	...	...	...	68,157 12 1
Fees and fines under the Financial Arrangements Act	236 6 7	275 7 10	5 0 2	5 17 7	...	...	...	522 12 2
Other receipts	...	294 12 5	239 8 0	1,269 11 2	25 0 0	...	7,637 3 1	9,465 14 8
Total Revenue Account	77,782 5 1	14,247 3 0	1,044 10 3	37,485 16 0	31 6 10	...	7,637 3 1	138,228 4 3
Loans under Government Loans to Local Bodies Act	50,840 13 10	5,712 0 0	1,180 10 0	39,914 18 6	...	1,000 0 0	...	98,648 2 4
Grants for special works	46,171 11 3	2,403 15 10	...	4,383 15 10	168 14 0	...	...	53,127 16 11
Total receipts from Government...	174,794 10 2	22,362 18 10	2,225 0 3	81,784 10 4	200 0 10	1,000 0 0	7,637 3 1	290,004 3 6

Local Governing Bodies.—Receipts, Expenditure, and Loans.

Financial Year ended 31st March, 1895.

—	Counties.	Boroughs.	Town Boards.	Road Boards.	River Boards (excluding Inch-Clutha, also Road Board).	Land-drainage Boards.	Waimakariri Water-supply Board.	Totals.
Receipts:—	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Revenue from—								
Rates	171,330 4 6	256,710 1 8	3,672 19 6	89,540 10 7	7,122 1 0	358 6 9	...	528,734 4 0
Licenses, rents, and other sources	42,102 15 11	192,020 12 7	7,476 10 8	11,281 18 10	3,425 3 0	67 18 6	...	256,374 19 6
Government	77,782 5 1	14,247 3 0	1,044 10 3	37,485 16 0	31 6 10	...	...	130,591 1 2
County	...	...	434 10 2	8,069 8 2	80 0 0	...	...	8,583 18 4
Total revenue	291,215 5 6	462,977 17 3	12,628 10 7	146,377 13 7	10,658 10 10	426 5 3	...	924,284 3 0
Receipts not revenue ...	112,542 17 0	99,408 7 11	1,915 6 9	46,892 17 7	1,075 2 7	1,000 0 0	3,000 0 0	265,834 11 10
Total receipts	403,758 2 6	562,386 5 2	14,543 17 4	193,270 11 2	11,733 13 5	1,426 5 3	3,000 0 0	1,190,118 14 10
Expenditure:—								
Public works	286,598 4 4	177,103 9 11	8,954 10 3	137,208 1 3	3,890 3 5	2,030 13 9	283 11 0	616,068 13 11
Charitable aid and hospitals	30,625 1 2	24,977 19 7	204 8 1	6,087 6 10	...	...	...	61,894 15 8
Management	44,082 5 5	52,142 10 5	2,568 6 2	18,543 16 4	1,298 16 6	115 12 3	1,078 19 7	119,830 6 8
Other expenditure	53,729 1 6	273,509 13 9	3,295 13 3	25,387 11 8	5,503 10 7	217 18 3	174 18 9	361,818 7 9
Total expenditure ...	415,034 12 5	527,733 13 8	15,022 17 9	187,226 16 1	10,692 10 6	2,364 4 3	1,537 9 4	1,159,612 4 0
Liabilities (including loans) ...	600,041 3 8	3,039,439 17 6	6,682 13 3	310,592 6 5	58,382 12 9	6,469 19 10	14,811 6 1	4,036,419 19 6
Loans*	10,510 0 0	2,757,395 0 0	1,184 0 0	6,916 0 0	42,455 0 0	...	14,700 0 0	2,833,160 0 0*

* Not including loans, amounting to £623,918, repayable by instalments under "The Roads and Bridges Construction Act, 1882," and "The Government Loans to Local Bodies Act, 1886."

LOCAL GOVERNING BODIES.—RECEIPTS, EXPENDITURE, AND LOANS—*continued.*

—	Financial Year ended 31st December, 1894.		Totals—all Local Bodies.
	Harbour Boards (less New River, included in Boroughs).	Drainage Board.	
Receipts:—	£ s. d.	£ s. d.	£ s. d.
Revenue from—			
Rates	34,517 17 3	18,616 1 0	581,868 2 3
Licenses, rents, and other sources ...	279,988 1 5	681 14 8	537,044 15 7
Government	7,637 3 1	...	138,228 4 3
County	...	...	8,583 18 4
Total revenue	322,143 1 9	19,297 15 8	1,265,725 0 5
Receipts not revenue	62,963 10 4	...	328,798 2 2
Total receipts	385,106 12 1	19,297 15 8	1,594,523 2 7
Expenditure:—			
Public works	136,695 9 3	4,913 12 11	757,677 16 1
Charitable aid and hospitals... ...	...	...	61,894 15 8
Management	33,980 9 4	578 3 6	154,388 19 6
Other expenditure	234,221 12 9	14,515 15 6	610,556 16 0
Total expenditure	404,897 11 4	20,007 11 11	1,584,518 7 3
Liabilities (including loans)	3,761,293 18 3	211,939 5 8	8,009,653 3 5
Loans	3,652,350 0 0	200,000 0 0	6,685,510 0 0

NOTE.—The return of receipts and expenditure in this summary represents the net receipts and expenditure of the year, exclusive of credit and debit balances, bank overdrafts, deposits, amounts paid to sinking funds, and for redemption of debentures.

VALUE OF PROPERTY IN COUNTIES AND BOROUGHS, 1895.

Local Bodies.	Rateable Property.	Unoccupied Crown and Native Lands.	Total.
	£	£	£
Boroughs	3,592,767	†	3,592,767
Boroughs (annual value, £2,198,713,* capitalised at 6 per cent.) ..	36,645,217	†	36,645,217
Counties—			
Road districts	38,923,947	1,953,625	40,877,572
Town districts	913,948	25,540	939,488
Town districts (annual value, £30,360,* capitalised at 6 per cent.)	506,000	†	506,000
Outlying	33,034,121 1,231,413‡	6,473,885	40,739,419
Totals	113,616,000 1,231,413‡	8,453,050	123,300,463

* By "The Rating Act, 1894," "the 'rateable value' of any property means the rent at which such property would let from year to year, deducting therefrom 20 per centum in case of houses, buildings, and other perishable property, and 10 per centum in case of land and other hereditaments, but shall in no case be less than 5 per centum on the value of the fee-simple thereof."

† Not returned.

‡ Aggregate value in Counties of Rotorua, East Taupo, West Taupo, Kawhia, and Sounds. In these counties there are no local bodies raising revenue, consequently the respective values of rateable and other property cannot be distinguished.

Here the total value of property in counties amounts to £83,062,479, and that in boroughs to £40,237,984.

The total value of real property in the colony, according to returns furnished by the local bodies, amounted, in March, 1895, to £123,300,463. This includes £113,616,000, value of rateable property, and £8,453,050 value of unoccupied Crown and Native lands which are not rateable. For five counties, however, where there are no local bodies raising revenue, the value of property is shown in the previous table in one amount, £1,231,413, without separating the unoccupied Crown and Native lands from those that are rateable.

Some of the boroughs and town districts rate on a capital value, but most of them upon an annual value of property. In the succeeding statement the capital value has, where necessary, been computed at 16·6 times the annual value.

In case of the boroughs, the Act under which the valuation is made provides for a reduction from the renting-value of 20 per cent. on houses and buildings, and 10 per cent. on land. The actual annual value of the properties will, therefore, be greater than the rating value by 11 to 25 per cent.

By a general valuation of land (including tenements, buildings, and hereditaments), with all improvements, made under "The Land and Income Assessment Act, 1891," in November of that year, the following results were arrived at. The value of the improvements is shown distinct from that of the unimproved lands. All land is included, whether occupied or unoccupied, whether belonging to companies or private persons, local bodies, Natives, or the Crown.

VALUE OF PROPERTY: ASSESSMENT UNDER LAND AND INCOME ASSESSMENT ACT, NOVEMBER, 1891.

Counties and Boroughs.	Actual Value, including Improvements.	Value of Improvements.	Unimproved Value.
	£	£	£
Counties	85,818,167	27,922,735	57,880,233
Boroughs	36,406,862	18,442,562	17,907,662
Totals	122,225,029	46,365,297	75,787,895

Since 1891 the total value of property in boroughs has been increased by the constitution of new boroughs, and that of the counties correspondingly reduced. This will account for the increase in the town and the decrease in the county property shown in the local bodies' returns for March, 1895.

The figures for the North and South Islands, according to the above assessment, together with the results of the previous assessment made in 1888, are reproduced as being still interesting, and as affording a good index of the progress of the colony within the dates given:—

	1888.	1891.	Increase.
	£	£	£
North Island ..	49,607,873	57,441,115	7,833,242
South Island ..	61,529,841	64,783,914	3,254,073
Totals ..	111,137,714	122,225,029	11,087,315

The names of the various boroughs, and the value of the rateable property in each returned by these bodies, as on the 31st March, 1895, were:—

Name of Borough.	Estimated Annual (or Renting) Value of Rateable Property in March, 1895.	Total Value of Rateable Property, March, 1895.
	£	£
Birkenhead ..	5,415	..
Devonport ..	18,591	..
Auckland ..	300,212	..
Newton ..	15,957	..
Newmarket ..	10,621	..
Parnell ..	24,779	..
Onehunga ..	15,128	..
Thames ..	26,744	..
Hamilton ..	7,064	..
Cambridge ..	4,838	..
Tauranga ..	..	56,322
Gisborne ..	27,500	..
New Plymouth ..	24,450	..
Hawera ..	10,546	..
Patea ..	5,048	..
Wanganui ..	41,000	..
Marton ..	10,094	..
Feilding ..	14,658	..
Palmerston North	..	546,578
Foxton ..	7,063	..
Napier ..	81,268	..
Hastings ..	29,000	..
Dannevirke ..	8,086	..
Woodville ..	9,948	..
Pahiatua ..	7,929	..
Masterton ..	27,256	..
Carterton ..	..	86,500
Greytown ..	8,313	..
Lower Hutt ..	..	245,036
Petone ..	17,458	..
Onslow ..	..	147,560
Wellington ..	345,000	..
Karori ..	..	117,682
Melrose ..	..	218,753
Picton ..	..	68,294
Blenheim ..	26,976	..
Nelson ..	53,237	..
Richmond ..	..	83,705
Westport ..	19,894	..
Greymouth ..	21,725	..
Brunner ..	7,751	..
Kumara ..	4,373	..
Hokitika ..	13,586	..
Ross ..	3,019	..
Rangiora ..	..	158,263
Kaiapoi ..	9,321	..
Christchurch ..	192,929	..
Linwood ..	..	428,798
St. Albans ..	..	524,037
Sydenham ..	..	669,053
Woolston ..	..	176,286
Sumner ..	7,130	..
Lyttelton ..	21,218	..
Akaroa ..	..	43,093
Ashburton ..	18,459	..
Timaru ..	35,764	..
Waimate ..	6,907	..
Oamaru ..	31,398	..
Hampden ..	..	10,236
Palmerston South	..	34,002
Hawkesbury ..	..	46,863
Port Chalmers ..	11,377	..
North-east Valley	17,916	..
Maori Hill ..	10,636	..
West Harbour ..	9,291	..
Dunedin ..	243,465	..
Roslyn ..	27,177	..
Mornington ..	21,853	..
Caversham ..	28,992	..
St. Kilda ..	8,763	..
South Dunedin ..	19,733	..
Green Island ..	3,136	..
Mosgiel ..	7,875	..
Milton ..	6,018	..
Kaitangata ..	8,039	..
Balclutha ..	5,522	..
Lawrence ..	7,864	..
Roxburgh ..	1,555	..
Tapanui ..	2,510	..
Naseby ..	2,739	..
Cromwell ..	3,281	..
Alexandra ..	1,436	..
Arrowtown ..	2,383	..
Queenstown ..	4,969	..
Gore ..	13,758	..
Winton ..	2,173	..
Invercargill ..	51,544	..
North Invercargill	3,882	..
East Invercargill	3,798	..
South Invercargill	5,694	..
Avenal ..	1,774	..
Gladstone ..	2,381	..
Campbelltown ..	6,993	..
Riverton ..	4,239	..

The capital and annual values of rateable property in town districts (1895) were as follow:—

Town Districts.	Capital Value of Rateable Property.	Capital Value of Unoccupied Crown and Native Lands.	Capital Value of all Property.*	Annual Value of Rateable Property.	Annual Value of Unoccupied Crown and Native Lands.	Annual Value of all Property.*
	£	£	£	£	£	£
Kamo	16,150	704	16,854	..	..	..
Whangarei ..	47,631	390	48,021	..	..	..
Helensville ..	..	..	..	3,127	..	3,127
Papakura	18,936	400	19,336	..	..	..
Te Aroha	..	..	..	3,364	..	3,364
Te Awamutu ..	20,602	944	21,546	..	..	..
Kihikihi ..	10,733	1,456	12,189	..	..	..
Ngaruawahia ..	13,560	..	13,560	..	..	..
Rotorua†	..	..	..	..	..	..
Opotiki	29,722	3,063	32,785	..	..	..
Raleigh (Waitara) ..	27,488	3,235	30,723	..	..	..
Opunake ..	23,324	3,269	26,593	..	..	..
Inglewood ..	12,392	..	12,392	..	..	..
Stratford ..	42,442	5,822	48,264	..	..	..
Normanby ..	13,400	160	13,560	..	..	..
Manaia ..	23,844	922	24,766	..	..	..
Waverley ..	21,327	..	21,327	..	..	..
Lethbridge (Turakina)	..	..	..	1,581	..	1,581
Bull's	..	..	..	3,665	..	3,665
Halcombe	..	..	..	1,700	..	1,700
Clyde (Wairoa) ..	42,882	2,975	45,857	..	..	..
Taradale	76,297	..	76,297	..	..	..
Ormondville ..	..	..	..	2,525	..	2,525
Waipawa	..	..	..	6,209	..	6,209
Kaikora North ..	..	..	..	2,511	..	2,511
Featherston ..	44,247	..	44,247	..	..	..
Johnsonville ..	46,040	..	46,040	..	..	..
Havelock ..	17,242	..	17,242	..	..	..
Amberley	..	..	..	2,294	..	2,294
Southbridge ..	34,046	..	34,046	..	..	..
Hampstead ..	59,113	..	59,113	..	..	..
Tinwald	46,559	..	46,559	..	..	..
Geraldine	39,609	2,000	41,609	..	..	..
Temuka	54,130	..	54,130	..	..	..
Arowhenua ..	23,500	..	23,500	..	..	..
Grey (now Allanton)	7,621	200	7,821	..	..	..
Outram	28,704	..	28,704	..	..	..
Clinton	..	..	..	1,382	..	1,382
Mataura	59,704	..	59,704	..	..	..
Wyndham	..	..	..	2,002	..	2,002
Otautau	12,703	..	12,703	..	..	..
Totals ..	913,948	25,540	939,488	30,360	..	30,360

* Exclusive of property owned by Town Boards. † Special town district under "The Thermal-Springs Districts Act, 1881."

The road districts, grouped according to the counties in which they are situated, with the value of property in each, are shown hereunder :—

County and District.	Total Value of Rateable Property.	Total Value of Unoccupied Crown and Native Lands.	Total Value of Property in District.
	£	£	£
Mongonui—			
Oruaiti (1893)	13,534	3,646	17,180
Oruru	27,471	13,640	41,111
Whangaroa (no road districts).			
Bay of Islands (no road districts).			
Hokianga (no road districts).			
Hobson (no road districts).			
Whangarei—			
Hikurangi	13,034	2,053	15,087
Kaurihohore	12,827	292	13,119
Kensington	21,920	4	21,924
Maungakaramea	19,141	1,356	20,497
Maunu	35,613	11,563	47,176
Otonga	13,301	1,846	15,147
Otonga East	10,873	9,019	19,892
Parua Bay	18,933	2,477	21,410
Ruarangi	8,860	1,191	10,051
Waikiekie	17,068	3,698	20,766
Waipu North	14,136	7,283	21,419
Whareora	8,012	665	8,677
Otamatea—			
Mangawai	19,770	2,150	21,920
Matakohe	26,778	4,762	31,540
Rodney—			
Ahuroa	4,638	499	5,137
Albertland North	6,419	583	7,002
Albertland South	24,164	984	25,148
Komokoriki	7,496	2,052	9,548
Mahurangi East	9,717	562	10,279
Mahurangi Upper	62,225	3,565	65,790
Mainene	6,242	816	7,058
Matakana East	7,861	540	8,401
Matakana West	13,646	348	13,994
Omaha	19,804	19,144	38,948
Puhoi	31,622	1,130	32,752
Tauhoa	19,470	791	20,261
Wharehine	12,379	365	12,744
Waitemata—			
Kaukapakapa	42,514	5,266	47,780
Pukeatua	27,811	8,539	36,350
Whangaparaoa	7,403	86	7,489
Eden—			
Arch Hill	85,665	..	85,665
Avondale	86,000	500	86,500
Eden Terrace	88,751	..	88,751
Epsom	141,275	..	141,275

County and District.	Total Value of Rateable Property. £	Total Value of Unoccupied Crown and Native Lands. £	Total Value of Property in District. £
Eden—*continued.*			
Mount Albert	146,628	..	146,628
Mount Eden	300,666	..	300,666
Mount Roskill	108,117	2,688	110,805
Mount Wellington	148,362	1,485	149,847
One-tree Hill	171,234	..	171,234
Panmure Township	13,452	..	13,452
Point Chevalier	29,438	79,950	109,388
Remuera	384,755	12,000	396,755
Tamaki West	88,555	..	88,555
Manukau—			
Awhitu	25,565	3,851	29,416
Howick Town	10,700	100	10,800
Hunua	20,640	177	20,817
Karaka	20,150	1,800	21,950
Mangare	169,321	7,530	176,851
Manurewa	28,960	622	29,582
Maraetai	9,450	650	10,100
Mauku	48,394	2,146	50,540
Maungatawhiri	28,657	147	28,804
Mercer Township	11,562	4,700	16,262
Opaheke	39,765	1,645	41,410
Opaheke North	32,982	185	33,167
Otahuhu	59,492	962	60,454
Pakuranga	48,170	..	48,170
Papakura	40,534	..	40,534
Paparata	36,656	996	37,652
Paparoa	10,330	..	10,330
Papatoitoi	50,765	..	50,765
Pokeno	33,900	902	34,802
Pollok Settlement	10,823	230	11,053
Pukekohe East	87,246	..	87,246
Pukekohe West	116,201	..	116,201
Tamaki East	93,419	40	93,459
Turanga	21,476	270	21,746
Waipipi	84,217	3,046	87,263
Wairoa South	80,780	1,923	82,703
Waiuku	52,741	2,041	54,782
Coromandel (no road districts).			
Thames (no road districts).			
Ohinemuri (no road districts).			
Piako—			
Matamata	68,454	..	68,454
Taotaoroa	40,003	5	40,008
Waitoa	228,716	21,776	250,492
Waikato—			
Cambridge	107,427	1,481	108,908
Huntly	62,461	58,915	121,376
Kirikiriroa	236,422	8,352	244,774
Tamahere	59,412	5,431	64,843
Whangamarino	60,898	58,915	119,813

County and District.	Total Value of Rateable Property. £	Total Value of Unoccupied Crown and Native Lands. £	Total Value of Property in District. £
Waipa—			
Newcastle	58,102	5,427	63,529
Pukekura	124,997	1,075	126,072
Rangiaohia	69,242	..	69,242
Tuhikaramea	18,095	..	18,095
Raglan—			
Karamu (no Board).			
Onewhero	9,939	51	9,990
Pirongia	16,093	6,739	22,832
Te Akau (no Board).			
Whaingaroa	18,635	7,685	26,320
Kawhia (no road districts).			
West Taupo (no road districts).			
East Taupo (no road districts).			
Rotorua (no road districts).			
Tauranga—			
Katikati	25,000	..	25,000
Te Puke	48,206	19,574	67,780
Te Puna	23,354	25,188	48,542
Whakatane—			
Opotiki	99,854	28,176	128,030
Whakatane	74,248	5,007	79,255
Waiapu (no road districts).			
Cook—			
Kaiti	46,000	2,500	48,500
Ngatapa	178,585	65,569	244,154
Ormond	67,918	475	68,393
Patutahi	195,992	8,718	204,710
Pouawa	90,000	2,000	92,000
Poverty Bay	187,398	24,533	211,931
Te Arai	156,650	52,339	208,989
Waikohu	316,121	..	316,121
Waimata	130,459	12,756	143,215
Whataupoko	75,420	10,022	85,442
Clifton (no road districts).			
Taranaki—			
Barrett	26,700	1,710	28,410
Carrington	18,511	..	18,511
Egmont	55,846	7,522	63,368
Elliot	13,984	319	14,303
Frankley	19,764	..	19,764
Henui	25,574	..	25,574
Mangorei	25,432	150	25,582
Moa	167,890	..	167,890
Oakura	33,381	8,732	42,113
Okato	40,176	3,807	43,983
Omata	29,849	..	29,849

County and District.	Total Value of Rateable Property. £	Total Value of Unoccupied Crown and Native Lands. £	Total Value of Property in District. £
Taranaki—*continued.*			
Parihaka	142,496	88,652	231,148
Tataraimaka	24,540	..	24,540
Upper Hurford	6,031	..	6,031
Waitara West	86,747	..	86,747
Waiwakaiho	28,411	1,955	30,366
Stratford—			
Manganui	92,400	..	92,400
Hawera—			
Waimate	635,144	55,853	690,997
Patea—			
Kohi	49,995	..	49,995
Motoroa	23,492	..	23,492
Okotuku	51,172	..	51,172
Patea East	107,520	14,237	121,757
Patea West	180,942	3,119	184,061
Wairoa	50,534	..	50,534
Waitotara-Momohaki	92,605	4,052	96,657
Whenuakura-Waitotara	124,539	..	124,539
Waitotara (no road districts).			
Wanganui—			
Kaitoke	113,663	..	113,663
Kaukatea	79,920	..	79,920
Mangawhero	204,071	291,675	495,746
Purua	149,587	..	149,587
Upper Wangaehu	182,694	67,588	250,282
Rangitikei (no road districts).			
Oroua—			
Fitzherbert	296,820	11,284	308,104
Manawatu	539,279	28,140	567,419
Manchester	862,287	23,324	885,611
Pohangina (no road districts).			
Kiwitea (no road districts).			
Manawatu (no road districts).			
Horowhenua—			
Otaki	148,424	..	148,424
Te Horo	124,231	..	124,231
Wirokino	419,787	97,230	517,017
Wairoa (no road districts).			
Hawke's Bay (no road districts).			
Waipawa—			
Danevirke (merged, Feb. 16, 1895).			
Kumeroa	105,714	116	105,830
Maharahara	64,455	3,856	68,311
Maungaatua	81,332	528	81,860

County and District.	Total Value of Rateable Property. £	Total Value of Unoccupied Crown and Native Lands. £	Total Value of Property in District. £
Waipawa—*continued.*			
Norsewood	97,995	..	97,995
Ruataniwha	296,689	..	296,689
Ruataniwha North	280,721	..	280,721
Takapau	174,573	11,539	186,112
Waipawa	60,951	..	60,951
Waipukurau	292,830	..	292,830
Woodville	117,280	..	117,280
Patangata—			
Oero	290,163	..	290,163
Patangata	147,304	..	147,304
Porangahau	258,393	36,347	294,740
Tamumu	509,994	30	510,024
Wallingford	337,873	3,219	341,092
Wanstead	110,201	10	110,211
Weber	111,922	..	111,922
Pahiatua (no road districts).			
Wairarapa North—			
Akiteo	206,842	..	206,842
Castlepoint	282,852	..	282,852
Eketahuna	231,974	11,326	243,300
Masterton	610,964	42,110	653,074
Mauriceville	94,283	13,575	107,858
Upper Taueru	81,872	3,139	85,011
Wairarapa South—			
Featherston	1,045,083	56,320	1,101,403
Taratahi-Carterton	634,463	46,705	681,168
Hutt—			
Makara	78,978	1,616	80,594
Seatoun	26,475	..	26,475
Sounds (no road districts).			
Marlborough—			
Awatere	553,635	1,700	555,335
Omaka	313,451	..	313,451
Pelorus	123,038	111,824	234,862
Picton	124,069	17,025	141,094
Spring Creek	159,745	..	159,745
Wairau	370,940	6,270	377,210
Kaikoura (no road districts).			
Collingwood—			
Collingwood	80,694	44,900	125,594
Takaka	112,989	40,213	153,202
Waimea—			
Dovedale	29,393	1,360	30,753
Motueka	71,997	7,634	79,631
Moutere Upper	36,764	..	36,764
Riwaka	72,511	..	72,511

County and District.	Total Value of Rateable Property. £	Total Value of Unoccupied Crown and Native Lands. £	Total Value of Property in District. £
Waimea—*continued.*			
Stoke	227,400	..	227,400
Suburban North	96,253	..	96,253
Waimea West	73,960	..	73,960
Buller (no road districts).			
Inangahua (no road districts).			
Grey (no road districts).			
Westland (no road districts).			
Amuri (no road districts).			
Cheviot (no road districts).			
Ashley—			
Ashley	299,709	515	300,224
Cust	119,108	..	119,108
Eyreton	387,646	..	387,646
Eyreton West	189,862	..	189,862
Kowai	490,981	861	491,842
Mandeville and Rangiora	565,638	988	566,626
Oxford	350,078	..	350,078
Waipara	1,147,057	17,600	1,164,657
Selwyn—			
Avon	540,800	..	540,800
Courtenay	750,419	17,454	767,873
Ellesmere	1,203,182	..	1,203,182
Halswell	304,296	..	304,296
Heathcote	376,451	700	377,151
Lake Coleridge	210,924	1,806	212,730
Lincoln	329,877	..	329,877
Malvern	134,934	4,337	139,271
Malvern East	112,116	..	112,116
Malvern South	83,427	..	83,427
Rakaia	331,202	172	331,374
Riccarton	833,466	..	833,466
Spreydon	140,561	..	140,561
Springs	502,163	2,774	504,937
Taitapu	98,070	..	98,070
Templeton	374,784	..	374,784
Upper Waimakariri	81,359	..	81,359
Akaroa—			
Akaroa and Wainui	310,437	..	310,437
Le Bon's Bay	71,724	..	71,724
Little River	360,000	..	360,000
Okain's Bay	95,045	..	95,045
Pigeon Bay	108,917	96	109,013
Port Levy	104,649	2,346	106,995
Port Victoria	76,847	..	76,847
Ashburton—			
Anama	43,877	..	43,877
Ashburton Upper	568,711	..	568,711
Coldstream	204,037	..	204,037
Longbeach	469,583	1,488	471,071
Mount Hutt	713,550	2,150	715,700

County and District.	Total Value of Rateable Property. £	Total Value of Unoccupied Crown and Native Lands. £	Total Value of Property in District. £
Ashburton—*continued.*			
Mount Somers	260,277	7,520	267,797
Rangitata	364,422	..	364,422
South Rakaia	502,322	2,484	504,806
Wakanui	385,060	5,874	390,934
Geraldine—			
Geraldine	462,684	..	462,684
Levels (merged, 4th Dec., 1894).			
Mount Peel	409,262	142	409,404
Temuka	699,013	4,243	703,256
Levels (from 4th December, 1894) (no road districts).			
Mackenzie (no road districts).			
Waimate (no road districts).			
Waitaki (no road districts).			
Waihemo (no road districts).			
Waikouaiti (no road districts).			
Peninsula—			
Otago Heads	33,502	..	33,502
Peninsula	196,335	1,000	197,335
Portobello	145,334	..	145,334
Tomahawk	31,623	347	31,970
Taieri (no road districts).			
Bruce—			
Balmoral	224,720	660	225,380
Inch-Clutha (Road and River) ..	68,343	..	68,343
Mount Stuart	102,998	6,565	109,563
Clutha (no road districts).			
Tuapeka (no road districts).			
Maniototo (no road districts).			
Vincent (no road districts).			
Lake (no road districts).			
Southland—			
Invercargill (no Board).			
Knapdale	257,084	..	257,084
Otaraia	138,167	7,294	145,461
Oteramika	269,264	..	269,264
Tuturau	140,090	..	140,090
Waimumu	177,885	17,894	195,779
Wyndham	72,047	1,394	73,441
Wallace (no road districts).			
Fiord (no road districts).			
Stewart Island (no road districts).			

The value of all real property within the boundaries of the various counties in March, 1895, as distributed among the several town, road, and outlying districts, is next given :—

Counties.	Area in Square Miles.	Value of Real Property.								
		Town Districts.		Road Districts.		Outlying.		County.		
		Rateable Property.	Unoccupied Crown and Native Lands.	Rateable Property.	Unoccupied Crown and Native Lands.	Rateable Property.	Unoccupied Crown and Native Lands.	Rateable Property.	Unoccupied Crown and Native Lands.	Total Property.
		£	£	£	£	£	£	£	£	£
Mongonui ..	934	..	..	41,005	17,286	92,944	41,441	133,949	58,727	192,676
Whangaroa ..	160	..	..	..	..	37,352	24,867	37,352	24,867	62,219
Hokianga ..	972	..	..	..	..	130,000	303,607	130,000	303,607	433,607
Bay of Islands	826	..	..	..	..	175,532	180,289	175,532	180,289	355,821
Hobson ..	688	..	..	..	..	267,810	54,490	267,810	54,490	322,300
Whangarei ..	928	63,781	1,094	193,718	41,447	146,480	75,265	403,979	117,806	521,785
Otamatea ..	364	..	..	46,548	6,912	178,096	30,049	224,644	36,961	261,605
Rodney ..	566	..	..	225,683	31,379	27,587	5,392	253,270	36,771	290,041
Waitemata ..	613	52,116	..	77,728	13,891	489,070	28,869	618,914	42,760	661,674
Eden ..	43	..	..	1,792,898	96,623	..	..	1,792,898	96,623	1,889,521
Manukau ..	791	18,936	400	1,272,896	33,963	..	..	1,291,832	34,363	1,326,195
Coromandel ..	403	..	..	..	..	130,805	81,630	130,805	81,630	212,435
Thames ..	494	..	..	..	..	182,059	69,191	182,059	69,191	251,250
Ohinemuri ..	478	..	..	..	..	80,032	126,771	80,032	126,771	206,803
Piako ..	1,095	56,070	..	337,171	21,781	282,792	41,921	676,033	63,702	739,735
Waikato ..	591	..	..	526,620	133,094	..	..	526,620	133,094	659,714
Waipa ..	282	44,895	2,400	270,436	6,502	85,487	3,573	400,818	12,475	413,293
Ragian ..	824	..	..	44,667	14,475	*266,277	110,000	310,944	124,475	435,419
Kawhia ..	1,515	..	..	..	..	354,269		354,269		..
West Taupo ..	1,594	..	..	..	..	235,997		235,997		..

East Taupo ..	2,581	..	..	..	..	301,681		301,681		..
Rotorua ..	984	..	..	..	..	168,371		168,371		..
Tauranga ..	577	..	..	96,560	44,762	115,526	41,721	212,086	86,483	298,569
Whakatane ..	3,156	29,722	3,063	174,102	33,183	62,109	342,731	265,933	378,977	644,910
Waiapu ..	1,121	..	..	..	..	271,791	193,121	271,791	193,121	464,912
Cook ..	1,950	..	..	1,444,543	178,912	240,140	98,251	1,684,683	277,163	1,961,846
Clifton ..	1,446	..	..	..	..	230,553	288,846	230,553	288,846	519,399
Taranaki ..	583	63,204	6,504	745,332	112,847	..	..	808,536	119,351	927,887
Stratford ..	768	42,442	5,822	92,400	..	210,517	186,635	345,359	192,457	537,816
Hawera ..	438	37,244	1,082	635,144	55,853	454,604	53,555	1,126,992	110,490	1,237,482
Patea ..	691	21,327	..	680,799	21,408	26,645	48,812	728,771	70,220	798,991
Waitotara ..	343	..	..	..	..	659,912	70,292	659,912	70,292	730,204
Wanganui ..	1,942	..	..	729,935	359,263	62,828	..	792,763	359,263	1,152,026
Rangitikei ..	852	87,433	..	..	..	1,278,687	131,299	1,366,120	131,299	1,497,419
Kiwitea ..	336	..	..	..	..	396,482	..	396,482	..	396,482
Oroua ..	692	28,333	..	1,698,386	62,748	..	..	1,726,719	62,748	1,789,467
Pohangina ..		..	..	..	..	294,175	..	294,175	..	294,175
Manawatu ..	267	..	..	..	..	782,346	4,680	782,346	4,680	787,026
Horowhenua	591	..	..	692,442	97,230	..	..	692,442	97,230	789,672
Wairoa ..	1,887	42,882	2,975	..	..	830,772	141,543	873,654	144,518	1,018,172
Hawke's Bay	3,232	76,297	..	..	..	3,358,408	318,969	3,434,705	318,969	3,753,674
Waipawa ..	1,154	145,566	..	1,572,540	16,039	328,533	3,025	2,046,639	19,064	2,065,703
Patangata ..	747	41,850	..	1,765,850	39,606	..	..	1,807,700	39,606	1,847,306

* Including the Road Districts of Karamu and Te Akau.

Counties.	Area in Square Miles.	Value of Real Property.								
		Town Districts.		Road Districts.		Outlying.		County.		
		Rateable Property.	Unoccupied Crown and Native Lands.	Rateable Property.	Unoccupied Crown and Native Lands.	Rateable Property.	Unoccupied Crown and Native Lands.	Rateable Property.	Unoccupied Crown and Native Lands.	Total Property.
		£	£	£	£	£	£	£	£	£
Pahiatua ..	302	..	..	..	..	420,266	41,641	420,266	41,641	461,907
Wairarapa N.	1,443	..	..	1,508,787	70,150	257,248	18,875	1,766,035	89,025	1,855,060
Wairarapa S.	1,281	44,247	..	1,679,546	103,025	..	..	1,723,793	103,025	1,826,818
Hutt ..	590	46,040	..	105,453	1,616	814,646	75,219	966,139	76,835	1,042,974
Sounds ..	573	..	..	..	..	171,095	..	171,095	..	..
Marlborough ..	3,812	17,242	..	1,644,878	136,819	..	..	1,662,120	136,819	1,798,939
Kaikoura ..	673	..	..	..	..	303,514	7,341	303,514	7,341	310,855
Collingwood ..	1,029	..	..	193,683	85,113	9,112	23,965	202,795	109,078	311,873
Waimea ..	1,662	..	..	608,278	8,994	398,763	50,548	1,007,041	59,542	1,066,583
Buller ..	1,818	..	..	..	..	293,140	390,326	293,140	390,326	683,466
Inangahua ..	2,256	..	..	..	..	326,426	471,134	326,426	471,134	797,560
Grey ..	1,452	..	..	..	..	359,456	500,000	359,456	500,000	859,456
Westland ..	4,420	..	..	..	..	159,625	1,114,597	159,625	1,114,597	1,274,222
Amuri ..	2,362	..	..	..	..	721,205	56,605	721,205	56,605	777,810
Cheviot ..	322	..	..	..	..	415,280	*70,000	415,280	*70,000	485,280
Ashley ..	1,627	38,233	..	3,550,079	19,964	..	..	3,588,312	19,964	3,608,276
Selwyn ..	2,597	34,046	..	6,408,031	27,243	..	..	6,442,077	27,243	6,469,320

Akaroa ..	353	..	..	1,127,619	2,442	..	..	1,127,619	2,442	1,130,061
Ashburton ..	2,542	105,672	..	3,511,839	19,516	..	..	3,617,511	19,516	3,637,027
Geraldine ..	1,222	117,239	2,000	1,570,959	4,385	..	..	1,688,198	6,385	1,694,583
Levels(*a*) ..		..	..	..	..	1,504,011	..	1,504,011	..	1,504,011
Mackenzie ..	2,537	..	..	..	..	735,613	9,854	735,613	9,854	745,467
Waimate ..	1,343	..	..	..	..	2,259,338	11,371	2,259,338	11,371	2,270,709
Waitaki ..	2,333	..	..	..	..	2,432,093	25,420	2,432,093	25,420	2,457,513
Waihemo ..	336	..	..	..	..	374,206	2,573	374,206	2,573	376,779
Waikouaiti ..	318	..	..	..	..	474,177	21,130	474,177	21,130	495,307
Peninsula ..	37	..	..	406,794	1,347	..	..	406,794	1,347	408,141
Taieri ..	930	36,325	200	..	..	1,188,109	2,765	1,224,434	2,965	1,227,399
Bruce ..	503	..	..	396,061	7,225	545,731	5,281	941,792	12,506	954,298
Clutha ..	946	23,033	..	..	..	1,017,437	100,270	1,040,470	100,270	1,140,740
Tuapeka ..	1,365	..	..	..	..	870,000	48,000	870,000	48,000	918,000
Maniototo ..	1,239	..	..	..	..	487,122	25,948	487,122	25,948	513,070
Vincent ..	2,684	..	..	..	..	556,340	40,000	556,340	40,000	596,340
Lake ..	3,712	..	..	..	..	323,332	38,128	323,332	38,128	361,460
Southland ..	3,852	93,070	..	1,054,537	26,582	2,418,051	..	3,565,658	26,582	3,592,240
Wallace ..	3,404	12,703	..	..	..	1,190,103	144,059	1,202,806	144,059	1,346,865
Fiord ..	3,040	..	..	..	..	..	..	..	..	..
Stewart Island	651	..	..	..	..	3,426	78,000	3,426	78,000	81,426
Totals ..	..	†1,419,948	25,540	38,923,947	1,953,625	33,034,121	6,473,885	73,378,016	8,453,050	81,831,066
						1,231,413‡		1,231,413‡		

* Approximate only. † Annual values capitalised at 6 per cent. ‡ Aggregate value in counties where there are no local governing bodies, and consequently the respective values of private and other property cannot be distinguished. (*a*) Separated from Geraldine, 4th December, 1894.

Licenses and Licensed Houses.

During the year ended the 31st March, 1895, 2,264 licenses for the sale of intoxicating liquors were granted. Of these, 1,579 were publicans' and accommodation licenses, 9 New Zealand wine, 38 bottle, 60 packet, 140 wholesale, and 438 conditional licenses. The fees paid for these licenses amounted to £55,321, and formed part of the revenue of the local governing bodies of the districts in which they were issued. Particulars are given in the following table :—

Number of Licenses granted during the Year 1894-95, and the Amount of Fees paid to Local Bodies therefor.

Licenses.	In Counties.	In Boroughs.	Total.
Publicans' licenses	651	686	1,337
Accommodation licenses ..	242	..	242
Total licensed houses ..	893	686	1,579
New Zealand wine licenses ..	1	8	9
Bottle licenses*	2	36	38
Packet licenses	10	50	60
Wholesale licenses	9	131	140
Conditional licenses	365	73	438
Total licenses granted ..	1,280	984	2,264
	£	£	£
Amount of license-fees paid to local bodies	21,448	33,873	55,321

The average number of persons to each licensed house in counties and boroughs respectively is next shown.

Licensed Houses, 1894-95: Proportion to Population.

	Number of Licensed Houses.†	Population.	Average Number of Persons to each Licensed House.
Counties	893	371,227	416
Boroughs	686	314,030	458
Totals	1,579	685,257‡	434

In 1893-94 the number of licensed houses in counties was 959, and those in boroughs 760, giving a total of 1,719 houses, or 140 more than in 1894-95. The average number of persons to a house increased from 381 in 1893-94 to 416 in 1894-95 in counties. In boroughs the average increased from 403 to 458.

The annual fees paid for licenses are—

	£
(1.) For a publicans' license	
(*a.*) Within the limits of a borough or town district	40§
(*b.*) Outside the aforesaid limits	25
(2.) For a New Zealand wine license	1
(3.) For an accommodation license, a sum to be determined by the Licensing Committee, not exceeding	20

* By the Act of 1895 no new bottle licenses may be granted.
† *I.e.*, houses holding publicans' or accommodation licenses.
‡ Excluding (4,218) population on shipboard and adjacent islands.
§ Between the hours of six in the morning and ten at night. For an eleven o'clock license an additional £5 must be paid.

(4.) For a bottle license	£40
(5.) For a packet license—	
(*a.*) For a vessel exceeding 50 tons register..	10
(*b.*) For a vessel not exceeding 50 tons register	5
(6.) For a wholesale license	20
(7.) For a conditional license, according to duration of license, a sum not exceeding	30

The approximate capital value of the licensed houses in the counties was stated at £668,971, and the same for certain of the boroughs at £155,993. There was, besides, an annual value of £108,691 for other licensed houses in the boroughs.

Local-option Poll.

Under "The Alcoholic Liquors Sale Control Act, 1893," each electoral district constituted for the election of a member of the House of Representatives is a licensing district, and the electors for the House of Representatives are also electors under the Licensing Acts.

The licensing poll is taken at the same time as the general election of members of the House of Representatives, and the questions for the decision of the voters are—

(1.) Whether the present number of licenses is to continue.

(2.) Whether the number is to be reduced.

(3.) Whether any licenses whatever are to be granted.

The voter may vote for one or two of these proposals, but no more.

The first and second questions are decided in the affirmative by an absolute majority of the votes recorded, but the third requires a three-fifths majority.

For the poll taken in March, 1894, it was found impossible to obtain strictly accurate returns of the results of the elections and polls from all the returning offices, but the following table is substantially correct:—

Number of electors on the rolls*	248,194
Number of men who voted at election of Committees..	71,763
" women who voted at election of Committees	45,022
Total number of voters	116,785
Number of men who voted at local-option poll ..	74,372
" women who voted at local-option poll ..	47,862
Total number of voters	122,234
Number of districts in which the poll was declared void	33
Number of districts in favour of reduction	14
" " no alteration ..	12
" " no licenses	1
" in which no proposal was carried..	2
Total number of districts	62

Clutha is the one district which carried prohibition.

* Many had been struck off for not voting at the general election for Parliament in 1893.

Publicans' Licenses.

Number of votes in favour of continuance of present number	42,429
Number of votes in favour of a reduction	16,096
no licenses	48,993
Total	107,518

Accommodation Licenses.

Number of votes in favour of continuance of present number	31,342
Number of votes in favour of reduction of present number	9,823
Number of votes in favour of no accommodation licenses	35,442
Total	76,607

Fire Brigades.

On the 31st December, 1895, there were 82 fire brigades in the colony, with a total strength of 1,584 (237 officers and 1,347 men). Compared with the numbers in 1894, these figures show an increase of 2 brigades, 2 officers, and 109 men. Of the 82 brigades now existing, 61 belong to the United Fire Brigades Association of New Zealand, which has a membership of about 1,300.

PART III.—ARTICLES ON SPECIAL SUBJECTS.

SECTION I.

DIFFERENCES BETWEEN THE LAWS OF ENGLAND AND NEW ZEALAND.

By W. S. Reid, Solicitor-General.

New Zealand being a British colony acquired by discovery and occupancy, the original settlers carried with them as their birthright such of their own laws as were applicable to the circumstances of the colony at its foundation, and also the sovereignty of their own State. Therefore the common law of England, and the English statute-law in force at the foundation of the colony, so far as applicable, formed its legal code at that time, and subsequent legislation in England did not affect the colony unless expressly made to do so. Hence in 1854 the first Act passed by the General Assembly after responsible Government had been established brought into force certain Acts of the Imperial Parliament, and in 1858 another Act was passed declaring that the laws of England, so far as applicable to the circumstances of the colony, should be deemed to be and to have been in force therein on and after the 14th day of January, 1840. The last-mentioned date was that on which Sir George Gipps, then Governor of New South Wales, under the powers vested in him, proclaimed Her Majesty's sovereignty over any territory acquired by her in New Zealand. British sovereignty over New Zealand was virtually established when Captain Cook took possession of the country in the name of His Majesty George the Third, in 1769; and New Zealand was included as a portion of the British dominions in the Proclamation which established the Colony of New South Wales in 1787.

Although laws passed in England do not extend to a colony after its foundation unless expressly named, the Imperial Parliament still retains the power to legislate in respect of such colony, and may do so in express or general terms, of which there are many instances as regards New Zealand. Moreover, the Acts of the English Parliament are paramount, and if there are Imperial and colonial enactments upon the same subject the latter must give way to the former. At the present day great care is taken to avoid any conflict in such matters, and the rules which formerly pre-

vailed as to repugnancy of colonial to Imperial legislation are construed more literally, and have been the subject of various enactments in England—in particular by an Act passed in 1865 (28 and 29 Vict., cap. 63) to remove doubts as to the validity of colonial laws.

The present sketch presents a mere outline of some of the most important instances in which the law of New Zealand differs from the law of England, the divergence in every case being occasioned by the necessity of adapting the laws to the peculiar circumstances of the colony, and extending rather to points of detail than to principles. Indeed, the tendency is to introduce in the colony all important suitable English legislation, of which instances are afforded by the passage of "The Arbitration Act, 1890"; "The Bills of Exchange Act, 1883"; "The Partnerships Act, 1891"; Trustee Acts of 1883 and 1891; "Sale of Goods Act, 1895," and many others, which are all adaptations from English Acts on like subjects.

In a subsequent part of this Year-book will be found several articles on certain of the subjects dealt with in this paper, and the attention of the reader is directed to these as affording fuller information.

Constitutional Law.

The Imperial Act (15 and 16 Vict., cap. 72), known in the colony as the "Constitution Act," constitutes a General Assembly, consisting of a Governor, a Legislative Council, and a House of Representatives: the Governor being appointed by the Crown, the Council nominated by the Governor on behalf of the Crown, and the House of Representatives elected by the people. This body is empowered to make laws "for the peace, order, and good government of New Zealand," but no such laws are to be "repugnant to the law of England." Power is reserved to the Crown to disallow any Bill passed by the General Assembly within two years after its receipt by a Secretary of State, and in the Royal Instructions issued to the Governor certain classes of laws are mentioned to which the Governor is directed not to assent, but to reserve the same for the signification of Her Majesty's pleasure.

The Constitution Act also established a system of local government by means of provinces with elected Provincial Councils, having certain legislative powers; but these, under authority specially conferred by Imperial legislation, were abolished in 1875, and other measures subsequently enacted by the General Assembly of a more simple nature.

The members of the Legislative Council formerly held office for life, but in 1891 a change was made, and all subsequent appointments are made for a term of seven years.

The House of Representatives was, under the original provisions of the Constitution Act, chosen by electors possessing a property qualification, but this has been altered, and, by an Act passed in 1896, the whole of the electors, with certain exceptions, will con-

sist of persons qualified as residents; the essentials being full age and a residence for one year in the colony, and in the electoral district for which the vote is claimed for a period of three months. This franchise is popularly known as "manhood suffrage." In 1893 the electoral franchise for the House of Representatives was extended to women, but, although every male elector is qualified to be a member of the House, a woman is not eligible.

Special provision is also made for the representation of the Maori race in the House of Representatives, and some members of that race are also nominated to the Legislative Council.

From the above it will be seen that the General Assembly possesses full power to legislate for the colony within its limits; but there is this essential difference between the Imperial legislation and that of a colony: that, in England, the validity of an Act of Parliament is never called in question by the Courts, but the powers of a colonial Legislature may be inquired into by the Supreme Court, or, if necessary, by the Privy Council. It must not be considered, however, that a colonial Legislature is a delegate of the Imperial Legislature. As remarked by the Privy Council in *Powell* v. *The Apollo Candle Company* (L.R. 10, A.C. 282), "It is a Legislature restricted in the area of its powers, but within that area unrestricted, and not acting as an agent or a delegate."

Ecclesiastical Law.

There is no State Church in New Zealand, but all denominations are free to worship in such manner as they think fit, the local law, in many cases, having made provision for this purpose.

Education.

By an Act passed in 1877 the General Assembly provided a system of free, secular, and compulsory primary education for the colony, making large grants-in-aid from the public funds; and, in respect of secondary education, has also granted land by way of endowments to various bodies of a public nature. Further information will be found in a special paper on this subject.

Joint-stock Companies.

The law as to companies generally is founded on the English statute-law, but, as regards mining companies, is specially adapted to the nature of these associations and the circumstances of the colony.

Land-laws.

In New Zealand the lands of the Crown became vested in it by priority of occupation, but, speaking generally, have been acquired by purchase or cession from the aboriginal owners. The sale or other disposition of all these lands is regulated by the General Assembly, the principal Act now in force being "The Land Act, 1892," as to the operation of which particulars are given in a subsequent paper.

The law of England prevails that all land in the colony is held directly or indirectly from the Crown. In 1840 the Government of the colony entered into a treaty with certain aboriginal natives, which purported to cede to the Queen the rights of sovereignty over the territories which these Natives possessed in New Zealand; in return for which the Queen guaranteed to such Natives certain possessory rights over such territories. This compact was known as the "Treaty of Waitangi," but its legal effect has been a subject of controversy, and, regarded as a cession to the Crown of the sovereignty of these islands, was, in the case of *Wi Parata* v. *The Bishop of Wellington*, decided by the Supreme Court in 1877 to be a nullity.

But, whatever may be the legal effect of this treaty, its provisions have been observed by the colony as regards lands in the possession of the Maori race, and in the Constitution Act (section 71) and "The Native Rights Act, 1865," will be found enactments respecting the customs and usages of the Native inhabitants, and the investigation of their titles to land, which indicate a desire to deal justly with these people, and recognise the duty devolving upon a civilised nation in its relations with an uncivilised community.

For the purpose of investigating such titles, and regulating the alienation and disposition of Native lands, a special Court has been constituted, which, after investigation, declares who is entitled to the land, and directs the issue of a grant or certificate of title from the Crown. The chief Act now in force for this purpose is "The Native Land Court Act, 1894."

Law Practitioners.

The profession of the law is regulated by Acts of the General Assembly, the essential difference between the law of England and that of the colony being that no period of pupilage or service under articles is required, but any person on passing the prescribed examination in law and general knowledge is entitled to admission. Every barrister may practice as a solicitor, and every solicitor may be admitted as a barrister on passing the additional examination required. An Act of 1896 has declared that women are eligible for admission as legal practitioners.

Legal Procedure.

All the Courts are constituted under local law, and the most important are the following:—

The Supreme Court, which originally had a jurisdiction similar to that possessed by the Superior Courts of Common Law and Equity in England, and also the ecclesiastical jurisdiction, now has a jurisdiction like that of the High Court of Justice. The practice of the Supreme Court in common law and equity has at all times been uniform in character, and the artificial system of pleading and procedure which prevailed in England has been greatly simplified

in this colony. In 1882 a code of civil procedure was enacted, based on the rules in force in England under the Judicature Acts, and is still in force. The Court has a special jurisdiction in divorce and matrimonial causes, and also in bankruptcy, each of which is adapted from Imperial legislation in these matters.

Criminal law and procedure is now regulated by "The Criminal Code Act, 1893," which is founded on the draft code prepared in England by the late Sir James FitzJames Stephen. Unlike most of the Australian Colonies, the institution of grand juries is still retained as respects the Supreme Court.

The Court of Appeal is composed of all the Judges of the Supreme Court, and has a civil and a criminal jurisdiction in respect of all cases in the Supreme Court and inferior Courts. An appeal also lies to the Privy Council in England in the prescribed cases, and this Court is the ultimate Court of Appeal so far as the colony is concerned.

District Courts are established in various parts of the colony, having a similar civil jurisdiction to that possessed by County Courts in England, and also a criminal jurisdiction analogous to that exercised by Courts of quarter sessions; but indictments in this Court are signed and presented by a Prosecutor on behalf of the Crown, and not found by a grand jury. In civil cases there may be juries, and always in criminal cases. These Courts also have a jurisdiction in bankruptcy. Magistrates' Courts are held before Stipendiary Magistrates, and exercise a minor civil and criminal jurisdiction; and Justices of the Peace have summary powers, and perform duties similar to those exercised in England under the statutes commonly known as Jervis's Acts.

The law of evidence in all these Courts is generally in accordance with that of England, but recent statutes have made some variations. By an Act passed in 1885 books purporting to contain the laws of any country, and standard works in general literature, are admissible in evidence. In actions for seduction it is not necessary to prove loss of service. By further Acts passed in 1893–94 an accused person, or the wife or husband of such person, may give evidence on his own behalf, but is not compellable to do so, and no comment adverse to the person charged is allowed to be made should he refrain from giving such evidence. An Act was also passed in 1895 amending the law of evidence generally, and enacting that confessions made to ministers of religion are privileged, and, like confessions to medical men, cannot be divulged in civil cases without consent of the patient.

The Native Land Court and its special duties have already been referred to.

Connected with the subject of legal procedure should be mentioned "The First Offenders' Probation Act, 1886," which in certain cases, not being grave offences, enables a Court before which a first offender is convicted to allow such offender to be at large on probation without suffering imprisonment.

Local Government.

All the bodies hereafter named are created under Acts of the General Assembly. These incorporate the local bodies, and provide for the election of their governing authorities; powers of general and special rating are given, and for borrowing money for the purposes of such bodies upon the security of special rates or other property, but the debts created are not a charge on the colonial revenue. These Acts also provide all necessary machinery for carrying out the powers and duties imposed on the local body. As a rule, all such governing authorities are elected by the ratepayers, and the colony is divided into the following:—

Boroughs, providing for the government of cities and towns by means of a Mayor and Councillors;

Town districts, for the government of smaller towns, in which the borough organization would be too cumbrous and expensive;

Counties, for the control and government of large areas of the colony (but not including boroughs), governed by a Chairman and Council;

Road districts, governed by Road Boards;

Harbour districts, governed by Harbour Boards for the management and control of navigable waters and ports;

River districts, relating to non-navigable waters, and managed by River Boards; and

Water-supply districts, for the supply of water and undertaking irrigation-works.

The laws relating to the sale and disposal of alcoholic liquor—known as the "Licensing Laws"—have been altered in recent years by the adoption of the principal of "local option." Particulars as to the operation of these laws are given on page 279.

Marriage and Divorce.

The marriage-law of the colony is provided for by Acts of the General Assembly, which are, in the main, like those in force in England. But marriage of a man with the sister of his deceased wife is lawful in New Zealand, under an Act passed in 1880. Reference has already been made to the Court for divorce and matrimonial causes. Bills relating to divorce passed by the General Assembly are required to be reserved by the Governor for the Royal assent.

Mining Law.

The common law as to the property of the Crown in Royal minerals (gold and silver), wherever found, is part of the law of New Zealand, but is practically never enforced. The industry of mining for gold on lands of the Crown is regulated by Act, and all persons are enabled to search for gold or silver on compliance with certain provisions. Special Courts are set up for dealing with claims arising under these Acts, and providing for the administration

of justice on goldfields. Power is given to the Crown to resume lands for mining purposes on payment of compensation to the owners. Laws also exist for the regulation of coal-mining and for the incorporation and management of all mining companies.

Public Works.

The mode of carrying out public works by the Government and by local authorities is established by law, providing for the taking of land compulsorily, and ascertaining the compensation to be paid to the owner for the same, or the injury done to him by the execution of the work. The present system is more simple than that formerly in force, which had been founded on the English Lands Clauses Act of 1845. The same law also provides for the control and management of the railways, which are the property of the colony.

Probate and Administration.

Jurisdiction as to the grant of probate and letters of administration is exercised by the Supreme Court, and also in certain cases by District Courts. By an Act passed in 1879 effect may be given to probates or letters of administration granted in any Australasian Colony, and this has now been extended to grants made in any part of Her Majesty's dominions.

In 1874 the law then in force was altered, and provision made that on the death of a person intestate his real estate should pass to his personal representatives, and be disposed of as if it were personalty, thus altering the law as to primogeniture, which had been similar to that of England. In 1879 this law was further amended and extended to the disposal of property of illegitimate persons dying intestate, and thus avoiding the rights of the Crown to such property by the process of escheat. In 1885 the law as to the distribution of estates of deceased persons dying intestate was altered, and several modifications made in the mode of distribution. A reference can only be made to the subject as indicating a difference between the law of England and the colony.

Relating to this subject is the function performed by the Public Trust Office in acting as the administrator of all persons dying intestate in the absence of any person entitled to be appointed. This office is regulated by Act, and attention is directed to the article published in this Year-book for fuller information as to the objects of this office.

Real Property Law.

Very early in the history of the colony a law was passed respecting the transfer of land, an Ordinance of 1842 having enacted several amended rules of law and provided a simple mode of conveying land, so that the cumbrous and complex system of assurances affecting real property in England never was in operation in New Zealand.

In this Ordinance was embodied many of the suggestions originally contained in the reports of the English Commissioners on the law of real property, made in the year 1829. Accompanying this Ordinance was another providing for the registration of deeds and instruments affecting real property. In 1870 the "Torrens system" as to the alienation of land, originally adopted in South Australia, was introduced into New Zealand, and more complete information as to this system is contained in a separate paper published in this work. Allusion has already been made to the abolition of primogeniture in 1874 in cases of intestacy. The law as to the property of married women has been put on a footing similar to that of England by an Act passed in 1884, and since amended. The law as to settled land is governed by Acts similar to those in force in England as to leases and sales of settled estates. A further Act was passed in 1886, which adopted portions of the Imperial Settled Land Act of 1882.

Revenue Laws.

Customs Duties.—The legislation affecting the administration of the law relating to Customs is similar to that in force in England, but the duties imposed on imports are of a more or less protective nature.

Deceased Persons' Estates Duties.—These can only be referred to in general terms. Duty is imposed on the value of the final balance of all real and personal estate left by a deceased person.

Land- and Income-tax.—The main features of this are explained in a separate paper.

Stamp Duties.—Most of the provisions of the principal Act of 1882 are based on English legislation, but there are many variations in the instruments liable to duty and in the exemptions. A special duty is imposed on alienations of Native lands in addition to the ordinary stamp duty.

Shipping Laws.

Such part of the English law affecting merchant shipping as applies to all Her Majesty's dominions is, of course, in force in the colony, and the other parts of the law affecting shipping are founded on the English statute-law, but varied to meet local requirements.

Social Laws.

Under this head are grouped a number of Acts, the titles of which indicate generally the objects for which they have been passed. Some of these are adapted from like English Acts, but others of a special nature go beyond, and are in advance of, the law in England. Many of these Acts have been specially referred to in previous Year-books; but it is impossible to do more, within available limits, than mention here the names of some of these measures:—

"Children's Protection Act, 1890."
"Chinese Immigrants Act, 1881."
"Industrial Conciliation and Arbitration Act, 1894."
"Contractors' and Workmen's Lien Act, 1892."
"Employers' Liability Act, 1882."
"Factories Act, 1894."
"Hospitals and Charitable Institutions Act, 1885."
"Hospitals and Charitable Institutions Act 1885 Amendment Act, 1886."
"Infant Life Protection Act, 1896."
"Servants' Registry-offices Act, 1895."
"Truck Act, 1891."
"Workmen's Wages Act, 1893."

Several of the above have been amended by subsequent Acts.

THE LAND SYSTEM OF NEW ZEALAND.

By S. Percy Smith, F.R.G.S., Secretary for Crown Lands and Surveyor-General.

The Crown lands of New Zealand are administered under "The Land Act, 1892," together with its amendments and the regulations made thereunder.

The distinguishing features of the present land system are the outcome of ideas which have been gradually coming to maturity for some years past in this colony. These features involve the principle of State-ownership of the soil, with a perpetual tenancy in the occupier. This, whatever may be the difference in detail, is the prevailing characteristic of the several systems under which land may now be selected. In New Zealand this tendency to State-ownership has taken a more pronounced form than in any other of the Australasian Colonies, and the duration of the leases has become so extended as to warrant the name, frequently given to them, of "everlasting leases." In point of fact, most of the Crown lands are now disposed of for terms of 999 years. The rentals are based on the assessed value of the land at the time of disposal, without increase or recurring valuations. Under this system there is a fixity of tenure practically equal to freehold, and which, like freehold, necessarily carries with it the power of sale, sub-lease, mortgage, or disposition by will. Since all lands held under the Crown by "lease in perpetuity" are subject to the land-tax, the necessity for the periodical revaluations under the perpetual-lease system is done away with, the State reaping the advantage of the unearned increment through the beforementioned tax. At the same time the improvements made in the soil by cultivation, &c., are secured to the tenant.

The advantages of this system to the selector are manifest. When it is taken into consideration that, with few exceptions, the

Crown lands are, in their prairie condition, incapable of producing anything until brought into cultivation, the advantage to the settler of setting free his capital to develop the capabilities of the soil, rather than having to expend it in the purchase of a freehold, is very apparent. One of the most striking benefits of this system is the advantage it gives to the poor man, who, with little more capital than his strong right arm, is enabled to make a home for himself; which, under the freehold system, he is frequently unable to accomplish.

The values placed on the Crown lands are, as a rule, low, for the State does not so much seek to raise a revenue directly therefrom as to encourage the occupation of the lands by the people; this secures indirectly an increased revenue, besides other advantages resulting from a numerous rural population.

Again, underlying the whole of the New Zealand land system is a further application of the principle of "the land for the people"—viz., the restriction in area which any man may hold. This subject has been forced upon the attention of the Legislature by defects in former systems, under which one individual with means at his command could appropriate large areas, to the exclusion of his poorer fellow-settler. Under conditions where the price at which the land is offered is fixed, and where choice of selection is by ballot, the poor settler has the same chance as the rich one, and may, should he wish it, hold as much land. The limit that a selector may hold is so fixed as to encourage the class of small farmers, and up to that limit the amount he may select is left entirely to himself. The Act defines the amount of land any one may select at 640 acres of first-class, or 2,000 acres of second-class land, inclusive of any land he may already hold. These limits apply to lands which are thrown open for "free selection," as it is termed, but in some cases, where found desirable, the limit is by regulation made much smaller.

In addition to the many advantages offered by the "lease-in-perpetuity" system, the Land Act provides others, to meet the wants of different classes. The rule is almost invariable, that land thrown open for so-called "free selection" is offered to the public under three different tenures, and the choice left entirely to the would-be settler. The three tenures are:—

(1.) For cash, in which one-fourth of the purchase-money is paid down at once, and the remainder within thirty days. The title does not issue until certain improvements have been made on the land.

(2.) Lease with a purchasing clause, at a 5-per-cent. rental on the value of the land; the lease being for twenty-five years with the right to purchase at the original upset price at any time after the first ten years.

(3.) Lease in perpetuity, at a rental of 4 per cent. on the capital value, as already described above.

The present land-laws have been in force since the 1st November, 1892, and, therefore, the returns of the Department of Lands and

Survey for the year ending the 31st March, 1896, will give a fair idea of the proportions in which lands have been disposed of under the three tenures above described during the past three and a half years. The figures given below include the "special settlements," all of which must by law be held on lease in perpetuity:—

1. Selected for cash, 2,034 selections; area, 137,153 acres.
2. Occupation with right of purchase, 1,494 selections; area, 321,240 acres.
3. Lease in perpetuity, 4,685 selections; area, 833,478 acres.

If the comparison is made between the above systems, where the choice of tenure is free, it shows for last year a slight preponderance in favour of the lease with right of purchase.

"The Land Act, 1892," provides for a special class of settlement which has found favour with the public to a very considerable extent during the last two years. This is known as the "small-farm association" system. It provides that, where not less than twelve individuals have associated themselves together for mutual help, such an association can, with the approval of the Minister of Lands, select a block of land of not more than 11,000 acres, but there must be a selector to each 200 acres in the block. The extreme limit that one person may hold is fixed at 320 acres. Settlements of this class are held on "lease in perpetuity" for 999 years, in the same way as lands under the same tenure when thrown open for free selection. The conditions of residence and improvement are the same. The system offers many advantages to the settler, so long as the blocks of land are judiciously chosen, having regard to quality of land, access, markets, and the probability of employment being obtained in the neighbourhood. In the eagerness to obtain lands on such easy terms, these points have, in the past, not received sufficient attention by some of the associations, and in consequence their success remains to be proved.

The following figures show the extent to which settlers have availed themselves of this class of settlement during the four years ending the 31st March, 1896; the figures represent approved applications only: 1,628 selectors have taken up 321,186 acres, in various parts of the colony, but principally in the Wellington District.

The "village-settlement system" of New Zealand has become widely known in the Australian Colonies, and has excited much inquiry with a view to its adoption in other parts. It is believed, however, that this and the "small-farm association" settlements, referred to above, are often confounded in the minds of the public, for of recent years there has been no very great extension of village settlements in this colony. (For details, see Mr. March's article, p. 294.) The system was initiated in 1886 by the late Hon. John Ballance, with the intention of assisting the poorer classes to settle on the land. It became immediately very popular, and by its means a considerable number of people were settled on the land who might otherwise never have become landholders. The features of the system were, originally, the possession of a small farm, not exceeding

50 acres in extent, held under a perpetual lease for terms of thirty years, with recurring valuations at the end of each term. The rental was 5 per cent. on a capital value of not less than £1 an acre. Residence and improvement of the soil were compulsory. The new and important feature in the village-settlement scheme, however, was the advance by the State of a sum not exceeding £2 10s. per acre, up to 20 acres, for the purpose of enabling the settler to cultivate the land, and of a further sum not exceeding £20 to build a house with, on which he paid interest at the rate of 5 per cent. Road-works were also very frequently undertaken in the neighbourhood of these settlements, and have been of very great help to the settlers. Under this system a number of settlements were formed, and, where the sites were chosen judiciously, a large measure of success has resulted therefrom.

The present law admits of similar village settlements, but the area which a selector may hold has been increased to 100 acres, and the tenure changed to a "lease in perpetuity" for 999 years, on a 4-per-cent. rental. Advances for clearing and house-building have, however, practically ceased, and, indeed, few settlements have lately been started, one of the principal reasons being the dearth of suitable lands on which to plant them. Crown lands adapted to the special features of "village settlements" are scarce.

A modification of the system, under the name of "improved-farm-settlements," has been introduced, however, which, so far as can be judged at present, will eventually, to a considerable extent, take the place of the "village settlement." In order to find work for the unemployed, considerable areas of forest-clad Crown lands have been set aside, and small contracts for the clearing, burning, and sowing these with grass have been let. The land is then subdivided into small farms, and let on "lease in perpetuity," at a rental sufficient to cover the cost of clearing, &c., together with a fair rental of the land. Up to the 31st March, 1896, thirty-nine settlements had been allocated, covering an area of 63,597 acres, situate in various parts of the colony. At that date 573 settlers had been allotted sections, and they had felled 9,301 acres of bush, and grassed 8,138 acres. The amount paid to the settlers up to the 31st March was £22,438, and the value of improvements on the land (including the Government advances) was £26,987.

The size of holdings averages about 100 acres.

With respect to other methods of dealing with the Crown estate, the "Digest of the Land-laws" appended hereto will give sufficient particulars.

The Land for Settlements Acts, 1892 and 1894.

Allusion has already been made to the dearth of Crown lands suitable for small settlements in localities where they are most needed—*i.e.*, in settled districts, where the lands are frequently held in large estates, whose owners employ a good deal of labour. Not only is this the case in many parts of the colony, but there is also a

want of land where the sons of settlers can obtain farms, not far from the homes of their parents. To meet this want the Hon. J. McKenzie, the present Minister of Lands, introduced into the Legislature in the session of 1892 a Bill intituled "The Land for Settlements Act," which authorised the purchase from private individuals of suitable properties for subdivision into small farms not exceeding 320 acres in extent. Under the provisions of this and the amending Acts several properties have been acquired, and subsequently divided into small farms and leased in perpetuity at a 5-per-cent. rental, on a capital value fixed at a sufficient rate to cover first cost, together with survey, administration, and roads (if required). The process of acquisition is as follows: Whenever a property is offered to the Government, if it is so situated as to meet the object of the Act, a report on it is obtained by a qualified Government officer, and, should his report be favourable, the question of purchase is then referred to a Board of Land Purchase Commissioners, composed of the Inspector, who is the permanent Chairman, three other Government officers, and a member of the local Land Board, whose training and duties qualify them to advise the Government as to whether the purchase is a suitable one, and as to the price which should be given for the property. It is only on the advice of this Board that the Government acts. In nearly all cases the properties acquired have been improved farms, situated in settled districts, where the tenants have some chance of obtaining employment in the vicinity. The amount which may be expended per annum under the Act of 1892 was £50,000; but the Act of 1894 extended this amount to £250,000, and it also provided that the limit of land which might be selected should be the same as under "The Land Act, 1892." The Act also provides for the exchange of high-lying pastoral Crown lands for low-lying agricultural lands suitable for small holdings. A new feature was introduced into the Act of 1894—namely, the power of compulsory taking of lands in cases where the Board could not agree with the owner as to price, &c., and where the Governor in Council decides that the possession of the land for purposes of subdivision is otherwise desirable. The amount payable to the owner is decided by a Compensation Court with full powers. Only one property has hitherto been acquired compulsorily, and that has since been disposed of on satisfactory terms. Up to the 31st March, 1896, nineteen estates had been purchased, at a cost of over £209,559, which covered an area of 60,074 acres. At the same date there were living on those estates which had been subdivided and selected 643 persons, in the place of the few who held these places formerly. The whole of these estates, at the date given, in some cases had not been selected, but the farms leased were bringing in a rental of 4·76 per cent. on the capital sunk in them. This extension of the provisions of the previous Act should prove beneficial in providing homes for a large class of persons who, from inexperience or other reasons, are in a measure prohibited from occupying the waste lands of the Crown; and, moreover, as the properties acquired are all more or less im-

proved, they seem to afford to the small-farmer class of the Old Country an opening for building up homes for themselves where their previous experience will be of use, instead of having to learn—often by sad experience—the methods adapted to a new and wild country.

"The Land for Settlements Act Amendment Act, 1896," contains special provisions as to the disposal of lands acquired under "The Land for Settlements Act, 1894," giving the preference to landless applicants for allotments, and requiring applicants for rural land to satisfy the Land Board as to their means to stock and cultivate the same and erect suitable buildings thereon. It also provides, in cases where buildings are on the land to be disposed of, that their value, apart from the capital value of the land, shall, with interest thereon at the rate of 5 per cent. per annum, be paid by the tenant in half-yearly instalments extending over a term of years.

There are also regulations as to advances by Government to successful applicants for allotments, in aid of the cost of fencing and planting the same and building dwelling-houses thereon, and special provisions as to allotments for workmen's homes, the area of which should not in any case exceed 3 acres.

Village-homestead Settlements.

By J. E. March, Superintendent.

Very few subjects have occupied so much public attention, and there are few on which there has been such a diversity of opinion, as the village-homestead settlement scheme initiated by the late Hon. Mr. Ballance. Not only has this been the case in New Zealand, but beyond the colony as well. Thus, in the early part of 1891, the Hon. Mr. Copley, Commissioner of Crown Lands in South Australia, paid an official and special visit to New Zealand, the object being, as stated in his report, "to inquire into the working of the village-homestead special settlements, concerning which so many conflicting statements had been made in South Australia."

Again, at the end of 1893, the Hon. Mr. McIntyre, Commissioner of Crown Lands, Victoria, paid an official visit to this colony for the purpose of "inquiring into the system of land-settlement, and inspecting the village settlements." In his report, dated Melbourne, 19th February, 1894, the Hon. Mr. McIntyre says: "From my personal observations, and from the information I was enabled to obtain through the documents placed at my disposal, I think I am perfectly justified in stating that the success of the village-settlement movement in New Zealand has been proved. It has got beyond the experimental stage; and the system, if I mistake not, is firmly grafted on the land policy of that country. Any apprehensions which I may have entertained of the ultimate success of our Victorian village settlements have entirely disappeared in the light of the experience gained in New Zealand."

The plan of forming village settlements was first commenced in

the Provincial District of Canterbury by the Hon. Mr. Rolleston. It was on a small scale, but it worked admirably. In 1874 and 1875 there was a difficulty in finding quarters or employment for immigrants, who had arrived in Canterbury in considerable numbers, and it was decided to try the experiment of settling them on the land in districts where they were likely to obtain work. The course adopted was briefly as follows: On the line of railway, or adjacent thereto, as at Rakaia, Orari, and Arowhenua, blocks of Government land were laid off into sections varying in area from one-quarter to five acres. Assistance was given to the extent of £10 towards the erection of a small hut or cottage. The terms of occupation were as follows: For the first year, rent free; and for the second and third years a rental of 2s. per week was charged, to recoup the Treasury the amount advanced.

In the formation of some of these settlements, notably at Geraldine, Timaru, and Waimate, the idea was not to permanently locate the immigrants, on whose behalf the plan had been adopted, but merely allow them to occupy the land temporarily; and it was considered that in three years they would be enabled to find situations or places elsewhere. All traces of the settlements formed in the localities named have long since disappeared.

The land comprised in the village settlements formed at Rakaia, Arowhenua, Beaconsfield, and other districts in Canterbury was sold to the original settlers on the deferred-payment system.

From 1876 to 1886, a period of ten years, very little was done in extending the system, but in the latter year the late Hon. Mr. Ballance, then Minister of Lands, introduced regulations for the formation of village-homestead special settlements. These were of a liberal character; and the assistance granted by way of loans for dwelling-houses, bush-felling, grassing, &c., enabled an industrious man to make and establish a comfortable home, while he was precluded from parting with the freehold.

A large number of settlements were thus formed, and, generally speaking, the settlers and their families have comfortable homes, and look healthy and contented; the financial results prove conclusively that the settlements are successful.

During the period from October, 1887, to January, 1891, no new village-homestead settlements were formed; on the contrary, it was decided early in 1888 to withdraw all the unselected sections in the settlements already formed from occupation under that system, and to open the land under ordinary conditions of settlement—namely, for cash, deferred payment, or perpetual lease.

The original system was again introduced by the Hon. Mr. McKenzie, Minister of Lands, in March, 1891, with a modification in the amount to be advanced, which was limited to a sum not exceeding £10, to assist a selector in the erection of a dwelling-house on his section.

The number of village settlements now in the colony is 151. Of these, 48 are situated in the North Island and 103 in the South

Island. The number settled on the land (including wives and families) is 4,867, and 96 selections have not yet been reported on, as the time allowed under the regulations for residence has not expired. The total acreage held is 35,256 acres: of this, 16,786 acres are in the North Island, and 18,470 acres in the South Island. The average area to each settler is 23½ acres. The total amount advanced for cottages, bush-felling, grassing, &c., from the commencement of the system to the 31st March, 1896, was £25,878, equivalent to an advance of 14s. 8d. per acre. The amount advanced to the settlers in the North Island was £20,467, and in the South Island £5,411. During the year the sum of £565 of this advance has been repaid to the Treasury. The total annual rent, including interest on advances, is £5,074, and the amount received during the year was £4,407. It does not follow, however, that the difference between these two amounts represents arrears, as the former sum is the annual rent, whereas the latter sum, in many cases, includes only six months' rent on sections recently acquired. The total amount received for rent and interest from the commencement of the system to the 31st March last was £22,112. Of this amount, £9,878 was paid in the North Island, and £12,234 by settlers in the South Island. The arrears of rent and interest on 31st March were £1,998 in the North Island and £256 in the South Island. The value of improvements on the land amounts to £101,922.

The returns for the year ending 31st March, 1896, show the position of these settlements to be briefly as follows:—

Number of settlements in the colony ...	151
Number of original settlers	1,987
Original settlers now remaining ...	1,200
Number of present settlers	1,488
Number settled on the land, including wives and families	4,867
Total area held (acres)	35,256
Average area to each settler (acres) ...	23½
Area laid down in pasture or cultivated (acres)	16,165
Amount advanced for buildings, bush-felling, grassing, &c., from the commencement of the system to 31st March, 1896	£25,878
Advances repaid	£565
Annual rent and interest	£5,074
Amount received as rent and interest for year ending 31st March, 1896 ...	£4,407
Total amount received from the commencement of the system to 31st March, 1896	£22,112
Arrears of rent and interest	£2,254
Value of improvements now on the land ...	£101,922

The above figures prove conclusively that the system is one to encourage and extend.

Purchase of Native Lands by Government.

From about the year 1823 (which is the date of the first recorded deed) until the 6th February, 1840, the date of the Treaty of Waitangi, lands in New Zealand were acquired by direct purchase from the Maoris by individual members of the white races. During the years 1837 to 1839, or about the time that it became probable that the sovereignty of the islands would be assumed by the Queen, the greater number of these purchases were made, and they extended to most parts of the country. These purchases are technically known as "the Old Land Claims," and their total number (including pre-emptive claims), as estimated by Commissioner F. Dillon Bell in 1862, was 1,376, covering an area of about 10,322,453 acres, out of which large area grants were recommended for 292,475 acres. These figures have been slightly added to since, but not to any very large extent. The large area shown above was reduced on survey to about 474,000 acres, situated principally to the north of Auckland. The difference between the amount granted and the total area surveyed became what are termed "surplus lands of the Crown." It was held that the Native title had been fully extinguished over the whole area surveyed; but, as by statute the claimants could only be granted 2,560 acres each, the balance became vested in the Crown on the assumption of the sovereignty, owing to the Native title having been fully extinguished.

In many cases the titles did not issue to those to whom the land was awarded, as they were compensated by scrip issued by the Government, with the understanding that such scrip was to be exercised in the purchase of Crown lands in the neighbourhood of Auckland, to which place it was desirable—so soon as the capital was founded—to draw a population. The lands thus paid for in scrip became Crown lands, and these, together with the surplus lands, have from time to time been disposed of and settled on. The amount of scrip, &c., issued up to 1862 was over £109,000.

On the signing of the Treaty of Waitangi on the 6th February, 1840, the pre-emptive right of purchase from the Maoris was ceded to the Queen, and consequently private purchase ceased. This remained the law until the passing of "The Native Land Act, 1862," when the Crown relinquished its right of pre-emption, whilst at the same time the purchase of Native lands for the Crown did not abate, but continued side by side with the private purchases up to the passing of "The Native Land Court Act, 1894."

From time to time since 1840 various sums were appropriated by Government or by Parliament for the acquisition of a Crown estate. Up to the date of passing of "The Native Land Act, 1862," these operations were conducted by officers of the Government specially appointed, who, from a knowledge of the Maoris, their customs and disposition, were successful in securing large areas of land for settlement. It must be conceded that their operations as a whole were successful, and that the number of disputed cases

arising out of their labours was exceedingly small. The Waitara purchase is, however, here excluded, for there were reasons of general policy affecting that sale which did not prevail in other cases. This purchase was the ostensible cause of the war of 1860 and following years, but the motives which led to it were far deeper than the mere purchase of a few acres—there was a great principle at stake.

The difference effected in the mode of purchase by "The Native Land Act, 1862," was this: Previously, the title of the Maoris who were to receive payment for the land was decided by the Land Purchase officers; but the Act quoted set up a Court, presided over by able Judges, who determined the titles, which were afterwards registered in a special Court. Purchases have since been effected with the registered owners.

It is difficult to obtain figures showing the actual area acquired by the Crown from the Maoris up to 1870, but in round numbers it was 6,000,000 acres in the North Island; whilst the whole of the South Island, with the exception of reserves for the original Native owners, was acquired prior to the passing of "The Native Land Act, 1862." Stewart Island was purchased from the Native owners by deed dated 29th June, 1864.

The Native rebellion of 1860–69 brought Native-land purchases, for the time being, practically to a standstill.

The Immigration and Public Works Acts of 1870 and 1873 appropriated £200,000 and £500,000, respectively, for the purchase of lands in the North Island; and these amounts have, up to the 31st of March, 1896, been augmented by further annual appropriations from the public funds and other loan-moneys, covering altogether a total expenditure since 1870 of £1,660,804, with the following results: Area finally acquired in the North Island from Natives, from 1870 to 31st March, 1896, 6,426,104 acres. Area under negotiation in the North Island on 31st March, 1896, 1,992,606 acres; interests therein finally acquired, 608,433 acres.

Digest of the Land-Laws.

Administration.

The Crown lands are administered, under the authority of "The Land Act, 1892," by the Hon. the Minister of Lands at Wellington. For convenience the colony is divided into ten land districts, each being under the local direction of a Commissioner and a Land Board. The Commissioner's office is known as the principal land office, and in some of the larger districts there are one or more sub-offices. It is with these land offices the selector has to transact all business, from the first consultation of the maps to the final receipt of the Crown title.

Land Districts and Principal Land Offices.

The names of the land districts and of the towns where each principal office is situated are, beginning with the most northerly and taking them geographically, as under:—

Land District.	Town where Principal Land Office is situated.	Land District.	Town where Principal Land Office is situated.
Auckland	.. Auckland.	Marlborough	.. Blenheim.
Taranaki	.. New Plymouth.	Westland	.. Hokitika.
Hawke's Bay	.. Napier.	Canterbury	.. Christchurch.
Wellington	.. Wellington.	Otago	.. Dunedin.
Nelson	.. Nelson.	Southland	.. Invercargill.

Classification of Lands, &c.

Crown Lands are divided into three classes:—

(1.) Town and village lands, the upset prices of which are, respectively, not less than £20 and £3 per acre; such lands are sold by auction:

(2.) Suburban lands, the upset price of which may not be less than £2 an acre; these lands are also sold at auction:

(3.) Rural lands, which may be disposed of at not less than £1 per acre for first-class, and 5s. an acre for second-class lands; such lands may be sold or leased by auction, or sold or leased on application.

No rural section may be larger than 640 acres in extent if first-class land, or 2,000 acres if second-class land, whether offered by auction or application. No person can select more than 640 acres of first-class or 2,000 acres of second-class land, including therein any land which he then holds. Pastoral runs are limited to areas which will carry 20,000 sheep or 4,000 cattle. No person can select more than one run.

Mode of acquiring Crown Lands.

Crown Lands may be acquired as follows:—

(1.) By auction, after survey, in which case one-fifth of the price is paid down at the time of sale, the balance within thirty days:

(2.) By application, after the lands have been notified as open for selection, in which case the applicant fills up a form (to be obtained at any of the Land Offices) and makes the declaration and deposit required by the particular system he wishes to select under.

All applications, whether for surveyed or unsurveyed lands, are deemed to be simultaneous if made on the same day, and, if there be more than one applicant for the same land, the right of selection is determined by ballot.

Lands thrown open for application may be either surveyed or unsurveyed, and those not selected the first day remain open.

The Optional System of Selection.

Lands for selection are notified as open for application on and after a stated day, and, *at the option of the applicant,* may be obtained on any of the three following tenures: (*a*) Cash; (*b*) Occupation with the right of purchase; (*c*) Lease in perpetuity.

(*a.*) *Cash.*

If the land is surveyed, one-fifth of the price is to be paid down at the time of application, and the balance within thirty days; or, if the land is not completely surveyed, the survey-fee is paid on application, and goes towards the purchase of the land; the balance must be paid within thirty days of notice that the survey is completed.

A certificate of occupation will issue to the purchaser on final payment, which will be exchanged for a Crown title so soon as the Board is satisfied that the improvements mentioned below have been completed.

(*b.*) *Occupation with Right of Purchase.*

Lands selected on this tenure are held under a license for twenty-five years. At any time subsequent to the first ten years, and after having resided and made the improvements hereinafter described, the licensee can, on payment of the upset price of the land, acquire the freehold. If the land be not purchased, the license may be exchanged for a lease in perpetuity.

The rent is 5 per cent. on the cash price of the land; a half-year's rent has to be paid in with the application, if surveyed land, which represents the half-year's rent due in advance on the 1st day of January or July following the selection. If the land is unsurveyed, the cost of survey is to be deposited, and is credited to the selector as so much rent paid in advance, counted from the 1st day of January or July following thirty days' notice of the completion of survey.

Residence and improvement of the land are compulsory, as hereinafter described.

(*c.*) *Leases in Perpetuity.*

Lands selected on this tenure are leased for 999 years, subject to the conditions of residence and improvements described below. The rental is 4 per cent. on the cash price of the land, and applications are dealt with in the same way as under the previous tenure (*b*), but there is at no time a right of purchase.

Two or more persons may make a joint application to hold as tenants in common under either of the two last-named tenures.

Residence and Improvements.

Under the two last-mentioned tenures, the conditions as to residence and improvements are:—

RESIDENCE—

(1.) Must commence on bush or swamp lands within four

years, and in open or partly open land within one year, from the date of selection:

(2.) Must be continuous for six years on bush or swamp land, and for seven years on open or partly open land, on lands occupied with a right of purchase:

(3.) Must be continuous for a term of ten years on lease-in-perpetuity lands.

The Board has power to dispense with residence in certain cases, such as where the selector is residing on adjacent lands, or is a youth or unmarried woman living with parents, and in a few other cases.

RESIDENCE implies the erection of a habitable house to be approved of by the Board.

IMPROVEMENTS which must be made are as follows:—

(1.) Cash-tenure lands must be improved within seven years to an amount of £1 an acre for first-class land, and 10s. an acre for second-class land.

(2.) Lands held on lease with right of purchase, or on lease in perpetuity, must be improved to an amount equal to 10 per cent. of the value of the land within one year from the date of the license or lease; within two years must be improved to the amount of another 10 per cent.; within six years must be improved to the value of another 10 per cent., making 30 per cent. in all within the six years. In addition to the above, the land must be further improved to an amount of £1 an acre for first-class land, and on second-class land to an amount equal to the net price of the land, but not more than 10s. an acre.

Improvements may consist of reclamation from swamps, clearing of bush, planting with trees or hedges, cultivation of gardens, fencing, draining, making roads, wells, water-tanks, water-races, sheep-dips, embankments or protective-works, or in any way improving the character or fertility of the soil; or the erection of any building, &c.; and *cultivation* includes the clearing of land for cropping, or clearing and ploughing for laying down with artificial grasses, &c.

Special-settlement Associations.

Under the existing regulations any number of persons, not less than twelve, may apply for a block of land of not less than 1,000 acres or more than 11,000 acres in extent, but the number of members must be such that there shall be one for every two hundred acres in the block, and no one can hold more than 320 acres, except in swamp lands, where the area may be 500 acres.

The capital value of lands within a special settlement is fixed after survey by special valuation, but may not be less than 10s. an acre; the rental is not less than 4 per cent. on the capital value, and the tenure is a lease in perpetuity.

Residence, occupation, and improvements are generally the same

as already described, and applications have to be made in manner prescribed by regulations.

Applicants should apply to a Commissioner for a copy of the regulations, as they are liable to change at any time.

Improved-farm Settlements.

Special regulations are in force for this class of settlement, which should be applied for, but briefly the terms are as follows: Those who form settlements under these provisions are selected from the applicants by the Commissioner of Crown Lands, preference being given to married men. The areas of the farms may vary from 10 acres to 200 acres, according to locality; no settler can select more than one farm. The land is leased for 999 years at a rental of 4 per cent. on the capital value, to which is added 5 per cent. on the amount advanced by Government for clearing, grassing, &c. The rates allowed for felling are those current in the district, but must not exceed £1 15s. per acre. Advances to cover cost of sowing with grass will be made, if required, likewise not more than £10 towards building a house. Not more than 100 acres of felling will, however, be paid for. As a rule, the settlers can get employment on the road-works in the neighbourhood, but Government does not guarantee this.

Residence for the first ten years is compulsory, and improvements must be made in terms of Part III. of "The Land Act, 1892." (See *ante*.)

Village Settlements.

Village settlements are disposed of under regulations made from time to time by the Governor, but the main features are as follows:—

Such settlements may be divided into:—

(1.) Village allotments not exceeding one acre each, which are disposed of either by auction among the applicants or by application, as already described, with option of tenure, the cash price being not less than £3 per allotment:

(2.) Homestead allotments not exceeding 100 acres each, which are leased in perpetuity at a 4-per cent. rental on a capital value of not less than 10s. per acre.

Residence, improvements, and applications are the same as already described. The leases are exempt from liability to be seized or sold for debt or bankruptcy.

The Colonial Treasurer is empowered in certain cases to advance small sums for the purpose of enabling selectors to profitably occupy their allotments.

Small Grazing-runs.

Small grazing-runs are divided into two classes: First-class, not exceeding 5,000 acres; second-class, not exceeding 20,000 acres in area. The rental in both cases is not less than 2½ per cent. on the capital value per acre, but such capital value cannot

be less than 5s. per acre. Small grazing-runs are leased for terms of twenty-one years, with right of renewal for other twenty-one years, at a rent of 2½ per cent. on the then value of the land. The runs are declared open for selection, and applications and declarations on the forms provided have to be filled in and left at the Land Office, together with the deposit of one half-year's rent, which represents that due on the 1st day of March or September following the selection.

No holder of a pastoral run, and no holder of freehold or leasehold land of any kind whatever, over 1,000 acres in area, exclusive of the small grazing-run applied for, may be a selector under this system; and only one small grazing-run can be held by any one person.

The lease entitles the holder to the grazing rights, and to the cultivation of any part of the run, and to the reservation of 150 acres round his homestead through which no road may be taken; but the runs are subject to the mining laws.

Residence is compulsory, if bush or swamp land, within three years; if open, within one year; and must be continuous to the end of the term, but may in a few cases be relaxed. Improvements necessary are as follows: Within the first year, to the amount of one year's rent; within the second year, to another year's rent; and, within six years, to the value of two other years' rent: making in all a sum equal to four years' rental, which must be expended within six years. In addition to these improvements, bush-covered first-class runs must be improved to an amount of 10s. an acre, and second-class bush-clad runs to an amount of 5s. an acre.

These runs may be divided, after three years' compliance with the conditions, amongst the members of the selector's family.

Pastoral Runs.

Pastoral country is let by auction for varying terms not exceeding twenty-one years; and, excepting in extraordinary circumstances, runs must not be of a greater extent than will carry 20,000 sheep or 4,000 head of cattle. Runs are classified from time to time by special Commissioners into: (1) Pastoral lands, which are suitable only for depasturing more than 5,000 sheep; (2) pastoral-agricultural lands, suitable for subdivision into areas of under 5,000 acres, which may be either let as pastoral runs, generally for short terms, or cut up for settlement in some other form. Leases of pastoral lands may not be resumed; leases of pastoral-agricultural lands may be resumed at any time after twelve months' notice, without compensation.

No one can hold more than one run; but, in case of any one holding a run of a carrying-capacity less than 10,000 sheep, he may take up additional country up to that limit.

Runs are offered at auction from time to time, and half a year's rent has to be paid down at the time of sale, being the amount due in advance on the 1st day of March or September following the

sale, and the purchaser has to make the declaration required by the Act. All leases begin on the 1st day of March, and they entitle the holder to the grazing rights, but not to the soil, timber, or minerals; and the lease terminates over any part of the run which may be leased for some other purpose, purchased, or reserved. The tenant has to prevent the burning of timber or bush; in open country to prevent the growth of gorse, broom, or sweetbriar; and to destroy the rabbits on his run. With the consent of the Land Board, the interest in a run may be transferred or mortgaged, but power of sale under a mortgage must be exercised within two years.

In case it is determined again to lease any run on expiry of the lease, the new lease must be offered by auction twelve months before the end of the term, and if, on leasing, it shall be purchased by some one other than the previous lessee, valuation for improvements, to be made by an appraiser, shall be paid by the incoming tenant, but to a value not greater than three times the annual rent—excepting in the case of a rabbit-proof fence, which is to be valued separately. If the run is not again leased, the value of rabbit-proof fencing is paid by the Crown, but the tenant has no claim against the Crown beyond the value of the rabbit-proof fence; he may, however, within three months of sale, remove fences, buildings, &c. Runs may also be divided with the approval of the Board.

Survey Charges on Unsurveyed Lands.

The following is the scale of charges for surveys of unsurveyed lands:—

Not exceeding 30 acres, £6.
Exceeding 30 and up to 50 acres, 3s. 6d. per acre, but not less than £6.
Exceeding 50 and up to 100 acres, 3s. per acre, but not less than £8 15s.
Exceeding 100 and up to 200 acres, 2s. 6d. per acre, but not less than £15.
Exceeding 200 and up to 300 acres, 2s. per acre, but not less than £25.
Exceeding 300 and up to 500 acres, 1s. 8d. per acre, but not less than £30.
Exceeding 500 and up to 1,000 acres, 1s. 4d. per acre, but not less than £41 10s.
Exceeding 1,000 and up to 2,000 acres, 1s. per acre, but not less than £66 10s.

For the survey of any area of rural land, being open land, the scale of charges shall be two-thirds the foregoing rates.

THE LAND TRANSFER SYSTEM IN NEW ZEALAND.

By G. B. DAVY, Registrar-General of Lands.

A RECENT distinguished visitor to the colony (Lord Folkestone) is reported to have expressed the opinion that little progress would be made in England in settling the people on the soil, or in subdividing the land, until the cumbrous and antiquated system of land-tenure and land transfer was reformed, and made as simple and inexpensive as in New Zealand. It is, indeed, only by comparison with the system of conveyancing which it was intended to supersede, and which still obtains in the Old Country, that the value of the method of dealing with real property introduced into this colony by "The Land Transfer Act, 1870," can be fully appreciated. As a matter of fact, however, there still are, and have been since 1870, two systems of dealing with land in the colony: that is to say, the "deeds registration," or, as it is familiarly called, the "old" system, which is a reproduction, *plus* registration, of the old English system of conveyancing, and the Land Transfer system proper, which, under the name of the "Torrens" system, was originally adopted by the Legislature of South Australia in 1857, and subsequently by the other Australian Colonies. It is, of course, to the latter of these that the remarks above quoted refer. It is the merit of that system to have freed the lands of the colony from the trammels of English Real Property Law, and to have assimilated the mode of dealing with real property to that which regulates dealings with ships, and with the large class of personal property represented by stocks and shares in public companies and in the public funds. Its introduction was the first of a series of reforms tending in the direction of abolishing the artificial distinction created by law between the two classes of property, a distinction which was, by lawyers of the old school, deemed insuperable.

As already stated, however, it is to the legislature of South Australia that the honour belongs of being the first to break away from English precedents, and to bring the long-vexed question of Land Transfer reform to a practical solution. "The Land Transfer Act (New Zealand), 1870," only adopted with such modifications as circumstances required the Act of the sister colony. Nor has the subject been entirely overlooked by the Imperial Legislature. "The Land Transfer Act (England), 1875," tentatively introduced the system in England; but, as its adoption is entirely optional on the part of landed proprietors, it has as a practical reform remained almost in abeyance. In these colonies, however, where the same difficulties and prejudices have not existed, the Land Transfer system has been from the first a popular institution, and it would at this date be superfluous to adduce any argument in its favour but that of experience. That it has not as yet been universally adopted is due not to any doubt on the part of landowners as to its utility or perfect efficiency, but to other causes hereafter referred to.

The fundamental principle of the system, as distinguished from ordinary conveyancing, and from the system of deeds registration, is "registered proprietorship"—in other words, the ascertainment from the register with absolute certainty of the person or persons with whom it is safe for an intending purchaser to deal. This is precisely the difficulty which, under the old system of conveyancing, causes so much trouble, expense, and uncertainty. The person with whom you are proposing to deal may have all the "*indicia*" of ownership—*i.e.*, he may be in possession of the land under a duly-registered conveyance, backed by an imposing array of legal documents. But, for all these, there is no guarantee that he is actually what he is represented to be. To ascertain this, you must follow the land through all its devolutions and changes of ownership, for say thirty or forty years, and test carefully every link in the chain of evidence which constitutes what is called the "title." You must ascertain that each act in the series is in order, that every instrument has been executed by the proper person or persons and with all requisite formalities, and that there are no outstanding interests of any kind. Failure in any of these respects may vitiate the title. And although the complete system of deeds registration which was established in the colony from an early period greatly facilitates such an investigation, it will be found in many cases sufficiently tedious and complicated. The parcel of land under investigation may perhaps have been acquired through several distinct lines of title, each of which, with all its ramifications, has to be separately traced and verified. Each or any of these again may be complicated by wills, settlements, intestacies, and other incidents of the devolution of real estate, out of which may arise difficult questions and contingencies more or less remote, to be guarded against; to say nothing of errors and misdescriptions due to the careless preparation of deeds, &c., which are by no means infrequent. All this is sufficiently annoying to the vendor, who, unless guarded by carefully prepared conditions of sale, will perhaps be called on to remove at considerable cost and trouble some doubt or defect, or to supply additional evidence, and may think himself fortunate if he is able to comply with the requisition. On the other hand, the ingenuity of the purchaser, or rather, of his legal adviser (for he, too, must have a lawyer at his elbow), is stimulated to the utmost in the detection of flaws and possible contingencies by the knowledge that when he, in his turn, becomes the vendor, the same process will be repeated with himself as the victim, and the title subjected to a similar inquisition on the part of the next purchaser. And so the matter goes on with ever-increasing complexity, and without hope of finality. But once let the land be brought under the Land Transfer Act, and all this trouble and annoyance becomes a thing of the past. The title is investigated once for all by the officers appointed for the purpose, and if accepted, the thenceforth useless title-deeds are consigned to oblivion in the archives of the department, the proprietor receiving in lieu thereof a certificate of

title showing the exact nature of his interest. On this certificate are noted all leases, encumbrances, &c., affecting the ownership, the position and boundaries of the land being indicated by diagram. A duplicate of this certificate is retained in the Land Transfer Office, and when bound with other certificates in the register-book constitutes what is called a "folium" of the register. Should the proprietor thereafter propose to deal with the land, all that an intending purchaser has to do is to consult this folium, which he is entitled to do on payment of a small fee, and he will see at a glance all that it concerns him to know in order to enable him to complete the transaction with absolute security. This done, the original proprietor hands over to the purchaser the certificate of title, together with a duly-executed transfer, on production of which to the Registrar the purchaser becomes in his turn the registered proprietor and the holder of the existing certificate of title.

It could be wished that a system, the advantages of which are so obvious, could at once have been made applicable to all dealings with land throughout the colony. This, however, has not been found practicable, and the operation of the Act has hitherto been limited to land alienated by the Crown since 1870, and to such other land as may be brought under the operation of the Act on the voluntary application of the proprietor. Although the old system is in this way in gradual course of extinction, it is likely to be many years before the process is completed; and the land not under the Act being for the most part in the cities and older settlements, represents a very considerable proportion in point of value. Many landowners still hold their land by the original Crown grant, or by titles but little removed from it, and to such the Land Transfer Act offers no present inducement. Some, again, are deterred by unwillingness to submit for investigation and public notification claims which may be still open to question. For, be it understood, the Land Transfer Act does not profess to validate doubtful claims, or to convert a bad title into a good one. On the contrary, no title would be accepted under the Act which was not considered, at all events, a good holding title. But the great obstacle to the general adoption of the system is the want of reliable surveys, and the cost and trouble to which persons seeking to bring land under the Act are often subjected in consequence. There seems no remedy for this, and experience makes the necessity for strictness in the matter of survey more and more apparent. Applications are not unfrequently withdrawn on this account, and, in fact, the survey question is the main difficulty with which the Land Transfer Department has had to contend.

Intimately connected with the survey question, and indeed largely dependent on it, is that of indefeasibility of title. Indefeasibility, absolute and unqualified, is the popular idea of a Land Transfer title, and, so far as legislative enactments can achieve indefeasibility, it has been achieved. As we have already seen, each devolution of title acquires by registration an independent validity, which places

the certificate of title on a level in point of simplicity and security with a Crown grant. But, unfortunately, no legislative ingenuity can overcome the difficulties and defects inherent in the instruments with which it has to work, and the imperfection of the survey system has, to some extent, communicated itself to the land transfer. Though sufficient for the primary purposes of settlement, the early surveys of the colony are for the most part inadequate and untrustworthy as the basis of a system to which perfect accuracy in this respect is essential, and serious discrepancies between title and actual occupation are not infrequent. Nor have the private surveys, made for the purposes of the Act, proved always reliable. The consequence is that the calling in and revision of certificates of title, though theoretically impossible, is by no means uncommon; and it must be admitted that a purchaser cannot always depend on maintaining the precise boundaries indicated. This, however, is a difficulty which will be gradually eliminated, and ample provision is made by the Act for pecuniary compensation in such cases. Practically, therefore, the protection afforded to a *bonâ fide* purchaser in dealing with the registered proprietor is absolute.

And here at the outset appeared a difficulty. It is, of course, impossible to ignore the existence of trusts and equitable interests, and a registered proprietor may be, and often is, a mere trustee for the benefit of others, whose interests might be prejudicially affected by this unqualified power of disposition. It was pointed out that the old system, with all its inconveniences, provided certain checks on improper dealing with land by persons in fiduciary positions which would not exist under the system of registered proprietorship; whilst to admit notice of trust on the register would be to sacrifice the principle of the Act and to revert to an inconvenient extent to the former practice. Clearly the difficulty had to be met, and the risk of fraud narrowed to the utmost. It has been observed that breaches of trust most frequently occur in the case of sole trustees, who may (contrary perhaps to the original intention) have become such by death or resignation of co-trustees. To meet this contingency the Act provides that where two or more persons who are trustees are registered as joint proprietors the words "No survivorship" may, at the instance of the person creating the trust, be indorsed on the certificate of title. The effect of this is that during the continuance of the trust the original number of trustees must be maintained in order to effect any dealing with the property. But a more effective provision is the right given by the Act to persons claiming under any unregistered right or interest to enter a "caveat," or caution, upon the register, indicating the existence of such interest, and prohibiting any dealing with the land inconsistent therewith. The purchaser who finds this entry on the register will be put on his guard, and must be careful how he parts with his money, as until the caveat is removed no dealing of any kind will be registered. That these provisions have proved effectual may be inferred from the fact that in the course of twenty-three years and upwards no fraudulent dealing

has come to light in this colony which can be said to have been specially referable to the Land Transfer system. Should any such occur, it will probably be due to neglect on the part of the persons defrauded to use necessary precautions.

From the foregoing it will appear that, except as the subject of a caveat (in which case it would be under the protection of the Supreme Court in its equitable jurisdiction), no estate or interest of any kind can exist in land under the Land Transfer Act otherwise than by registration. As a consequence, the acquirement of rights in land by adverse possession and user, or what is called title by prescription, is impossible. This is a considerable innovation on English law, and whether it may be claimed as an improvement is possibly matter of opinion. It is obviously, however, a necessary result of the principle of registered proprietorship.

Another important incident in the Land Transfer system is economy in legal charges. The necessity for legal assistance in bringing land under the Act is, of course, dependent upon the nature of the title and the degree of complexity attending it. But for dealing with land after the issue of a certificate of title no technical knowledge is requisite, and a large proportion of Land Transfer business is transacted by unprofessional persons licensed as land brokers, whose charges are limited by the Act.

Reference has been made to payment of compensation in cases where, for any reason, the certificate of title may have failed of effect. This compensation is payable out of a fund called the "Land Transfer Assurance Fund," established for that purpose under the provisions of the Act, and kept as a separate fund in the hands of the Public Trustee. The fund is at present maintained by a contribution of a halfpenny in the pound on the value of all land brought under the Act on the application of the proprietor. The claims on the Assurance Fund have not hitherto been either large or numerous, and have been principally in respect of deficiency in area or measurement arising from errors in survey.

It only remains to be said that persons bringing land under the Act are required to be perfectly frank in their dealings with the department, as the suppression or falsification of any material fact might, so long as the land remained in the hands of the original applicant, involve cancellation of the title, to say nothing of penalties. But no fraud or misrepresentation on the part of the applicant would affect the position of a purchaser, who, in any *bonâ fide* transaction, would be fully protected by the fact that he was dealing with a registered proprietor.

As to the practical working, the colony is divided into ten land registration districts, corresponding to the ten provincial districts or former provinces. In each of these is a District Land Registrar, who acts also in most cases as Examiner of Titles, and has full power to accept titles under the Act. An appeal lies from his decision to the Registrar-General of Land, and ultimately to the Supreme Court. The bulk of the land under the Act has, how-

ever, become so by reason of having been alienated from the Crown since 1870.

The foregoing is an outline of the principal features of the Land Transfer system as established in New Zealand. The Act under which the system is at present administered is "The Land Transfer Act, 1885," being a consolidation of the Act of 1870 and its amendments. The Act, with all necessary instructions for conduct of business, is published by the New Zealand Government in the form of a Land Transfer Handy-Book, obtainable from the Government Printer, Wellington.

FEES PAYABLE TO DISTRICT LAND REGISTRARS UNDER "THE LAND TRANSFER ACT, 1885."

	£	s.	d.
For the bringing land under the provisions of this Act (over and above the cost of advertisements)—			
When the title consists of a Crown grant, and none of the land included therein has been dealt with	0	2	0
When the title is of any other description and the value exceeds £300	1	0	0
When the title is of any other description and the value exceeds £200 and does not exceed £300	0	15	0
When the title is of any other description and the value exceeds £100 and does not exceed £200	0	10	0
When the title is of any other description and when the value does not exceed £100	0	5	0
Contribution to the Assurance Fund upon first bringing land under the Act, and upon the registration of an estate of freehold in possession derived by settlement, will, or intestacy—			
In the pound sterling	0	0	0½
Other fees—			
For every application to bring land under the Act	0	5	0
For every certificate of title on transfer where the consideration does not exceed £100	0	10	0
For every other certificate of title	1	0	0
Registering memorandum of transfer, mortgage, incumbrance, or lease	0	10	0
Registering transfer or discharge of mortgage or of incumbrance, or the transfer or surrender of a lease	0	5	0
Registering proprietor of any estate or interest derived by settlement or transmission	0	10	0
For every power of attorney deposited	0	10	0
For every registration abstract	1	0	0
For cancelling registration abstract	0	5	0
For every revocation order	0	10	0
Noting caveat	0	10	0
Cancelling or withdrawal of caveat, and for every notice relating to any caveat	0	5	0
For every search	0	2	0
For every general search	0	5	0
For every map or plan deposited	0	5	0
For every instrument declaratory of trusts, and for every will or other instrument deposited	0	10	0
For registering recovery by proceeding in law or equity or re-entry by lessee	0	10	0
For registering vesting of lease in mortgagee, consequent on refusal of Trustee in Bankruptcy to accept the same	0	10	0
For entering notice of marriage or death	0	10	0
For entering notice of writ or order of Supreme Court	0	10	0

	£	s.	d.
Taking affidavit or statutory declaration	0	5	0
For the exhibition of any deposited instrument, or for exhibiting deeds surrendered by applicant proprietor	0	5	0
For certified copy, not exceeding five folios	0	5	0
For every folio or part folio after first five	0	0	6
For every notice to produce deeds or instruments	0	5	0
For every outstanding interest noted on certificate of title ..	0	5	0
When any instrument purports to deal with land included in more than one grant or certificate, for each registration memorial after the first	0	2	0

Regulations.

All fees under the Act shall be due and payable in advance.

Where several properties are included in one form of application, there shall be charged in respect of each property an application fee, and a fee for bringing the land under the Act. Land included within one outer boundary shall be deemed one property for the purpose of this regulation.

In all cases a fee of one pound (£1) is hereby prescribed as the charge to be made for advertising notice of application; provided that, whenever it is necessary that unusual publicity shall be given to any application, the District Land Registrar may require payment of such additional sum as shall, in his judgment, be sufficient to defray the cost of such advertisements.

In all cases where application is made to bring land under the Act, and the certificate of title is directed to issue and is issued in the name of the applicant, the fees for bringing such land under the Act, with the exception of the "application fee," may, at the request of the applicant, remain unpaid until such land is dealt with by him as registered proprietor. The District Land Registrar shall retain any such certificate of title until the fees due upon the same have been paid, and, until such payment, shall not register any dealing with the land included in such certificate of title.

Printed forms supplied by the Registrar for use under the Act shall be charged for at the rate of one shilling each. Solicitors, land-brokers, and others having forms printed for their own use, and at their own expense, shall, on approval of such forms by the Registrar, be entitled to have the same sealed free of charge.

THE NATIVE LAND (VALIDATION OF TITLES) ACT.

THE Validation Court was constituted by an Act of Parliament in the year 1893, for the purpose of dealing with and finally settling the titles to lands acquired by Europeans from Natives, but which, owing to various complications, could not be completed by the ordinary methods of procedure. The policy of successive Ministries with regard to the acquisition of Native lands by private persons has varied from year to year, and gradually a mass of legislation had grown up, often conflicting, always complicated, and the cause of the gravest dissatisfaction among both races. Negotiations commenced under one law could not be completed under its successor, with the result that titles could not be obtained, and the progress of settlement was seriously retarded, and, in one district, almost entirely arrested.

The Native Land Court Act of 1889 attempted to provide a remedy by the creation of a Court of Commission to inquire into all the circumstances attending any alleged alienation or acquisition of land, or of any interest therein, prior to a certain date, "which may be barred or invalidated by any law now or at any time heretofore in force," and to report thereon. The Court was set up, but, from causes which need not be detailed here, it was unable to effect any progress. A change of Government took place in 1891, and the Commission was terminated. In 1892, the Native Land (Validation of Titles) Act was passed, which proposed to utilise the existing machinery of the Native Land Court to inquire into incomplete alienations, and to grant certificates which were to be subject to confirmation by Parliament.

In 1893 the present Act was passed, setting up a special Court, "the Validation Court," with Judges holding office for a fixed period, at a fixed salary, and removable only for such causes and in such manner as a Judge of the Supreme Court is removable. Only one such Judge has so far been appointed. The Court is empowered to deal with all land transactions between Europeans and Maoris, subject, however, to the important conditions that the claimant for validation is able to show,—

(1.) That any agreement or contract, irrespective of form, was one which, had it been made between Europeans touching and concerning lands held under Crown grant, would have been a valid and binding contract, capable of being enforced in the Supreme Court;

(2.) That any such agreement or contract was not in any respect contrary to equity and good conscience;

(3.) That any such agreement or contract was fully and perfectly understood at the time it was entered into by the agreeing or contracting parties, and was a fair agreement or contract for a reasonably sufficient and lawful consideration at the time and under the circumstances in which it was made; and the Court may refuse to validate any contract or agreement which fails to comply with any one of such requirements, or which, in the opinion of the Court, was not fair and reasonable, or was contrary to equity and good conscience, or tainted with actual fraud and improper dealing.

Appeals lie to the Court of Appeal only.

All orders and decrees made by the Court are to be laid before Parliament, and are to be deemed to be confirmed unless a resolution to the contrary be passed by either House. On confirmation, the titles issue to the persons entitled.

Such, shortly, are the salient features of the Act constituting the Validation Court. The Court itself is unique; it is armed with enormous powers, and it is subject to no other Court than the Court of Appeal. The object aimed at by the establishment of the Court was finality. The Court was therefore empowered to make final decrees which should not require formal confirmation by resolution or Act of Parliament, but should be confirmed unless expressly negatived by Parliament.

By subsequent legislation, Judges of the District Court and the Judges of the Native Land Court are made eligible for appointment as Judges of the Validation Court. They, however, hold their offices at the pleasure of the Governor.

ADVANCES TO SETTLERS.

"THE Government Advances to Settlers Act, 1894," aims at affording, consistently with the public safety, relief to country settlers having occasion to borrow, and to whom the high rates of interest and the heavy incidental expenses attending the mortgage of land had become burdensome. It authorises the creation of a capital fund, from which the settlers on the lands of the colony who possess land on which money can be lent without risk of loss may obtain small advances of capital to properly carry on their work of settlement or to overcome temporary embarrassment.

The terms and conditions of the advances are arranged with the utmost consideration for the settlers that prudent administration without loss to the colony will allow. The charges to the settler for the special valuation of the property offered as security, and for the legal costs incident to the mortgage, are as low as these charges can be made for reliable services. There are the larger considerations to the borrower, not only in a low rate of interest on the advance, but in the option of repaying the principal at any time, either wholly or by instalments. And settlers, whether they borrow money under this Act or not, must regard with satisfaction the supply of capital at reasonable rates of interest and on terms so convenient. In the provision for repayment of the amount of an advance wholly at any time, or in small sums from time to time as they can be saved, the borrower has a powerful inducement to economy. This is a provision, indeed, to enable the settler who borrows money to invest in his own property his savings or the profits of his business.

The advances under the 36-year table are made at a rate, payable half-yearly, of 6 per cent. per annum, of which 5 per cent. is for interest, and 1 per cent. in repayment of the capital; but, though the capital is to be thus repaid at a yearly rate of not less than 1 per cent., the borrower can, as has already been stated, repay the amount more rapidly, or at any time repay it wholly, and obtain a discharge of the mortgage in the manner afterwards explained.

The "fixed loan" system authorised by the amending Act of 1896 is hereafter explained.

The capital fund is authorised to be raised by New Zealand Government loans, not to exceed £1,500,000 for each of the two

years from the date of the passing of the Act, and at an annual rate of interest not higher than 4 per cent. The fund is thus restricted to £3,000,000, of which £1,500,000 has been raised at a rate of 3 per cent. The date for raising the balance of the fund was postponed by a subsequent Act.

For the purpose of carrying out the object of the Act, an office, called the "Government Advances to Settlers Office," has been established; and this office is administered by an officer called the "Superintendent," who is appointed by the Governor to hold office during pleasure, and is constituted a corporation sole under the style of the "Government Advances to Settlers Office Superintendent"; while, for the more satisfactory attainment of the same object, a Board, called the "General Board," co-operates with and assists the Superintendent, and advises with him generally. No advance can be granted otherwise than by the resolution of the General Board upon the written application of the proposed borrower, and upon a valuation made by or on behalf of the Superintendent and to the satisfaction of the General Board; and this valuation is made by qualified experts, whose reports comprise every circumstance that can be ascertained respecting the property.

The business of the Advances to Settlers Office is, accordingly, the advancing of money on the security of first mortgages on the following classes of lands in New Zealand, not being urban lands or suburban lands used for other than farming, dairying, or market-gardening purposes, free from all encumbrances, liens, and interests other than leasehold interests, that is to say:—

(1.) Freehold land held in fee-simple under "The Land Transfer Act, 1885," or freehold land held in fee-simple the title to which is registered under "The Deeds Registration Act, 1868."
(2.) Crown land held on perpetual lease under "The Land Act, 1885."
(3.) Crown land held under Parts III. and IV. of "The Land Act, 1892."
(4.) Crown land held on lease as a small grazing-run under "The Land Act, 1885," or under "The Land Act, 1892."
(5.) Crown land held on agricultural lease under "The Mining Act, 1891."
(6.) Crown land held on lease (not being for mining purposes) under "The Nelson and Westland Coalfields Administration Act, 1877."
(7.) Native land held on lease under "The West Coast Settlement Reserves Act, 1892"; or
(8.) Land held on lease under "The Westland and Nelson Native Reserves Act, 1887."
(9.) Land held under "The Thermal-Springs Districts Act, 1881."
(10.) Educational and other reserves which are subject to the provisions of "The Land Act 1877 Amendment Act, 1882,"

by virtue of Proclamation made under section 50 thereof; or "The Land Act, 1885," by virtue of Proclamation made under section 237 thereof; or "The Land Act, 1892," by virtue of Proclamation made under section 243 thereof, and are held on perpetual lease or lease in perpetuity, or on the deferred-payment or small grazing-runs systems.

(11.) Crown land held by license on the deferred payment system under Part III. of "The Land Act, 1885."

(12.) Land held under lease from a leasing authority, as defined by "The Public Bodies' Powers Act, 1887," and providing for the payment by the incoming tenant of valuation for improvements made upon the land, whether by the lessee named in such lease or any former lessee as tenant.

The class of land in each instance, and whether the land is or is not eligible, shall be determined by the Board.

Prior to the passing of the Amendment Acts of 1895 and 1896—which considerably enlarged the scope of the principal Act—the three classes of land (10), (11), and (12), were not eligible as securities for loans under the Act, and the many persons who had no other security to offer were consequently excluded from the benefits of the Act.

By the Amendment Act of 1896 the department is now enabled to grant fixed loans up to £3,000 for any term not exceeding ten years, and at 5 per cent. interest, on freehold security. The amount of the fixed loan is restricted to one-half the value of the security. The fixed loan is repayable (without sinking fund) at the end of the term for which it is granted, but the mortgagor may, on the due date of any half-yearly payment of interest, repay any sum of £5 or multiple of £5 in reduction of the principal.

It is necessary to the granting of an advance under the Act that,—

(*a.*) The property which the applicant offers to mortgage for the loan must consist of some one or more of the several foregoing classes of land, which has been ascertained by the special valuation by or on behalf of the Superintendent to be of the necessary value; and, if the security is a leasehold interest, all covenants and conditions on the lessee's part must have been complied with up to the date of the application for the advance.

(*b.*) The person desiring the advance must make a written application to the Superintendent on the form prescribed by regulations under the Act, and it has been arranged that copies may be obtained from any Postmaster in the colony, and the Postmaster will afford to applicants any explanation which may be required respecting the use of the form.

(*c.*) The application should be for a loan of not less than £25 and

of not more than £3,000, and should be accompanied by the valuation-fee prescribed; and, if the applicant has already obtained any advances under the Act, the amount of the application, added to the amount of the advances already obtained, should not exceed the sum of £3,000.

(*d.*) Where the security offered for the advance consists of leasehold land, the application in respect of such leasehold security should not be for more than half the value of the lessee's interest in the lease—that is to say, not for more than half the amount which the sale of the lessee's interest would realise.

(*e.*) Where the security offered consists of freehold lands, the application for an instalment loan in respect of such freehold security should not be for more than three-fifths of the value of that security, and for a fixed loan one-half of the value of such security. For example, a leasehold interest on which an advance could be made, and for which it is estimated that a purchaser would give £100, would be a security on which an advance up to £50 could be granted. A freehold property of the same value and acceptable for an advance would be a security on which an advance up to £60 might be made under the thirty-six year table, but only up to £50 under the fixed-loan system. The freehold property worth £100 and the leasehold interest worth £100 would together be a security on which an advance up to £110 might be granted under the thirty-six year table. Under the fixed-loan system the leasehold security is not eligible. These conditions are a restriction on the General Board, without whose resolution no advance can be granted, but do not entitle an applicant to an advance up to the limit, or, indeed, to any advance whatever without such resolution. The resolution of the Board is regulated by the amount which a sale of the property by auction has been estimated by the valuer to realise, but is also regulated by the risk of any loss from an advance on the property. No advance will be authorised which is not, in the judgment of the Board, consistent with that public safety which in the preamble to the Act is indicated as a principle of the measure.

Every mortgage not being a fixed loan executed under the Act is subject to the following provisions: The loan shall be for a term of 36½ years. The loan, with yearly interest at the rate of 5 per cent., must, at the furthest, be repaid by seventy-three half-yearly instalments, consisting partly of principal and partly of interest. Every such half-yearly instalment except the last shall for every £100 of the loan be £3, according to the following table, which shows how much of each instalment is on account of principal, how much for interest, and what balance of the principal the borrower will owe at the due date of each half-yearly instalment:—

TABLE OF PRESCRIBED HALF-YEARLY INSTALMENTS FOR EVERY ONE HUNDRED POUNDS OF THE LOAN.

Half-year.	Prescribed Half-yearly Instalment.	Apportioned thus:		Balance of Principal owing.
		On Account of Interest at 5 per Cent.	On Account of Principal.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1st	3 0 0	2 10 0	0 10 0	99 10 0
2nd	3 0 0	2 9 9	0 10 3	98 19 9
3rd	3 0 0	2 9 6	0 10 6	98 9 3
4th	3 0 0	2 9 3	0 10 9	97 18 6
5th	3 0 0	2 9 0	0 11 0	97 7 6
6th	3 0 0	2 8 8	0 11 4	96 16 2
7th	3 0 0	2 8 5	0 11 7	96 4 7
8th	3 0 0	2 8 1	0 11 11	95 12 8
9th	3 0 0	2 7 10	0 12 2	95 0 6
10th	3 0 0	2 7 6	0 12 6	94 8 0
11th	3 0 0	2 7 2	0 12 10	93 15 2
12th	3 0 0	2 6 11	0 13 1	93 2 1
13th	3 0 0	2 6 7	0 13 5	92 8 8
14th	3 0 0	2 6 3	0 13 9	91 14 11
15th	3 0 0	2 5 10	0 14 2	91 0 9
16th	3 0 0	2 5 6	0 14 6	90 6 3
17th	3 0 0	2 5 2	0 14 10	89 11 5
18th	3 0 0	2 4 9	0 15 3	88 16 2
19th	3 0 0	2 4 5	0 15 7	88 0 7
20th	3 0 0	2 4 0	0 16 0	87 4 7
21st	3 0 0	2 3 7	0 16 5	86 8 2
22nd	3 0 0	2 3 2	0 16 10	85 11 4
23rd	3 0 0	2 2 9	0 17 3	84 14 1
24th	3 0 0	2 2 4	0 17 8	83 16 5
25th	3 0 0	2 1 11	0 18 1	82 18 4
26th	3 0 0	2 1 6	0 18 6	81 19 10
27th	3 0 0	2 1 0	0 19 0	81 0 10
28th	3 0 0	2 0 6	0 19 6	80 1 4
29th	3 0 0	2 0 0	1 0 0	79 1 4
30th	3 0 0	1 19 6	1 0 6	78 0 10
31st	3 0 0	1 19 0	1 1 0	76 19 10
32nd	3 0 0	1 18 6	1 1 6	75 18 4
33rd	3 0 0	1 18 0	1 2 0	74 16 4
34th	3 0 0	1 17 5	1 2 7	73 13 9
35th	3 0 0	1 16 10	1 3 2	72 10 7
36th	3 0 0	1 16 3	1 3 9	71 6 10
37th	3 0 0	1 15 8	1 4 4	70 2 6
38th	3 0 0	1 15 1	1 4 11	68 17 7
39th	3 0 0	1 14 5	1 5 7	67 12 0
40th	3 0 0	1 13 10	1 6 2	66 5 10
41st	3 0 0	1 13 2	1 6 10	64 19 0
42nd	3 0 0	1 12 6	1 7 6	63 11 6
43rd	3 0 0	1 11 9	1 8 3	62 3 3
44th	3 0 0	1 11 1	1 8 11	60 14 4
45th	3 0 0	1 10 4	1 9 8	59 4 10
46th	3 0 0	1 9 7	1 10 5	57 14 5
47th	3 0 0	1 8 10	1 11 2	56 3 3
48th	3 0 0	1 8 1	1 11 11	54 11 4
49th	3 0 0	1 7 3	1 12 9	52 18 7
50th	3 0 0	1 6 6	1 13 6	51 5 1

TABLE OF PRESCRIBED HALF-YEARLY INSTALMENTS FOR EVERY ONE HUNDRED POUNDS OF THE LOAN—*continued.*

Half-year.	Prescribed Half-yearly Instalment.	Apportioned thus:		Balance of Principal owing.
		On Account of Interest at 5 per Cent.	On Account of Principal.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
51st	3 0 0	1 5 8	1 14 4	49 10 9
52nd	3 0 0	1 4 9	1 15 3	47 15 6
53rd	3 0 0	1 3 11	1 16 1	45 19 5
54th	3 0 0	1 3 0	1 17 0	44 2 5
55th	3 0 0	1 2 1	1 17 11	42 4 6
56th	3 0 0	1 1 1	1 18 11	40 5 7
57th	3 0 0	1 0 2	1 19 10	38 5 9
58th	3 0 0	0 19 2	2 0 10	36 4 11
59th	3 0 0	0 18 1	2 1 11	34 3 0
60th	3 0 0	0 17 1	2 2 11	32 0 1
61st	3 0 0	0 16 0	2 4 0	29 16 1
62nd	3 0 0	0 14 11	2 5 1	27 11 0
63rd	3 0 0	0 13 9	2 6 3	25 4 9
64th	3 0 0	0 12 7	2 7 5	22 17 4
65th	3 0 0	0 11 5	2 8 7	20 8 9
66th	3 0 0	0 10 3	2 9 9	17 19 0
67th	3 0 0	0 9 0	2 11 0	15 8 0
68th	3 0 0	0 7 8	2 12 4	12 15 8
69th	3 0 0	0 6 5	2 13 7	10 2 1
70th	3 0 0	0 5 1	2 14 11	7 7 2
71st	3 0 0	0 3 8	2 16 4	4 10 10
72nd	3 0 0	0 2 4	2 17 8	1 13 2
73rd	1 14 0	0 0 10	1 13 2	..

Notwithstanding the foregoing provisions, the mortgagor may, under the Thirty-six years' Table, pay to the Superintendent, with any of the prescribed half-yearly instalments, the whole balance of principal owing, and obtain a discharge of the mortgage-debt on payment of the fees prescribed for such discharge. For example: If the borrower of £100 should, at the close of the first year, pay to the Superintendent, in addition to the second instalment, a sum of £98 19s. 9d., the whole balance of principal owing would be refunded, and the borrower could then obtain a discharge of the mortgage on payment of the prescribed fees.

Or the mortgagor may from time to time pay to the Superintendent, in addition to the half-yearly instalments, sums of £5, or of a multiple of £5, in reduction of the mortgage-debt; and when the sums so paid amount, with the accumulated interest at an annual rate of 4 per cent. compounded yearly, to the balance of principal owing at the time according to the foregoing table, the mortgagor can obtain a discharge of the mortgage on payment of the prescribed fees. If for example, the borrower of £100 should, at the end of the second year of the mortgage, pay, in addition to the fourth half-yearly instalment of £3, a sum of £50 in reduction

of the mortgage-debt, the half-yearly instalments would continue to be payable until the balance of the principal owing should not exceed the amount of £50 with interest compounded annually at 4 per cent.; that is to say, the instalments would be payable for fourteen years, or until the twenty-eighth instalment had been paid, when the balance of principal owing would be £80 1s. 4d., and the sum of £50 would, with the accumulation of interest at 4 per cent. per annum, amount to £80 1s. A payment of 4d. would, consequently, then repay the whole balance of principal owing, and entitle the borrower to discharge of the mortgage on payment of the costs and fees for the discharge.

The valuation-fees to be paid by applicant, and which must accompany the application, are as follows:—

	£	s.	d.
On an application for a loan not exceeding £100 ..	0	10	6
Exceeding £100, but not exceeding £250	1	1	0
" £250 " £500	1	11	6
" £500 " £3,000	2	2	0

The fees and costs payable for mortgages under the Act are:—

Scale of Costs and Fees for Mortgages.

Mortgages under "The Land Transfer Act, 1885."

Law-costs of preparing, or perusing, and of registering mortgage (to be deducted from the advance),—

	£	s.	d.
If advance does not exceed £500	0	10	6
Exceeding £500, but not exceeding £1,000	1	1	0
Exceeding £1,000, but not exceeding £3,000 ..	1	11	6

With cash disbursements, which are the same in every case, namely,—

Mortgage form	2s.	
Search-fee	2s.	With an additional 2s. for every certificate of title after the first.
Registration	10s.	

Costs and fees for discharge of mortgage,—

Law-costs	5s.	With an additional 2s. for every certificate of title after the first.
Registration fee (if mortgage is discharged by the Advances to Settlers Office) ..	5s.	

Mortgages under "The Deeds Registration Act, 1868."

Costs of preparing, or perusing, and of registering mortgage, including disbursements (to be deducted from the advance),—

	£	s.	d.
If advance does not exceed £500	2	10	0
For every additional £500	0	15	0
Costs of discharge, including registration fees ..	1	1	0

No commission or charge or procuration fee for the promotion of an advance—that is, for the successful result of the application for the loan—should be paid or levied.

The officials of the Government Advances to Settlers Office are under oath to observe the strictest secrecy respecting the applications for advances, and are forbidden to give any information respecting the name of any applicant or the amount of the advance which the applicant may apply for or obtain, except to such of the officers as

may be appointed to assist in carrying out the provisions of the Act.

The interest received under the mortgages is to be applied to the payment of the interest on the loans raised for the purpose of the fund from which the advances are made; then, to the extent of one-tenth of the whole amount, to an assurance fund; and any residue is to be available for the general expenses of management. The amounts received from the borrowers in repayment of the capital or principal amounts of the advances are to be paid to the Public Trustee for investment as a sinking fund, to be held by the Public Trustee at the disposal of the Colonial Treasurer towards redemption of the debentures for the loans.

The first meeting of the General Board for the purpose of considering the applications for loans under the Act was held on the 23rd February, 1895, and up to the 30th November, 1896, there had been held one hundred and twelve meetings of the Board for the same purpose.

The advances authorised up to the 31st March, 1896, with other particulars, are given in the tables attached to the report laid before Parliament in accordance with the Act.

NEW ZEALAND CONSOLS.

THE purpose of "The New Zealand Consols Act, 1894," is, by providing for an inscription of such Consols, to give further facilities for the safe investment of savings. Practically, it establishes another branch of the Government Savings-Bank, with extended power of investment. Under section 3 the Colonial Treasurer is authorised to receive by way of deposits from persons in the colony sums of money up to £500,000; but the amount deposited in any one year must not be more than £250,000. The currency of such deposits is not to exceed forty years. The rate of interest must not exceed 4 per cent.

Post-office money-order offices throughout the colony are made use of to receive applications for inscription, and also for payment of the half-yearly interest on the amounts deposited. The Receivers are the Postmasters, and the Registrar under the Act is the Secretary to the Treasury, Wellington.

Regulations have been issued, under which every deposit of money for inscription is to be accompanied by an application according to the form given below, which is to be signed by the applicant and countersigned by the Receiver (Postmaster) taking the deposit. The person paying the money receives an interim receipt pending official acknowledgment from the Registrar at Wellington. The receipt subsequently given by the Registrar to the Consols-holder is not a nego-

tiable document, or of monetary value, beyond its being proof of the deposit for purposes of inscription. A holder of Consols can obtain from the Registrar on application and payment of 5s. a certified copy of any entry in the register relating to his deposit.

There is provision for the transfer of Consols from one holder to another on application being made to the Registrar according to the second form given, and payment of 1s. fee.

In case an inscriber desires to make use of his deposit, or any portion of it, to the extent of £5, or a multiple of £5, he can obtain a Consols certificate, which is payable to bearer, and is transferable by delivery. This certificate entitles the holder to receive interest half-yearly at the same rate as the original inscription, and also to payment of the principal sum on the due date.

The application for the certificate must be according to the form appended, and the fee payable is 1s. for every one hundred pounds or aliquot part thereof expressed in the certificate. There is also a fee at the above rate for inscribing the amount of a Consols certificate. The form of Consols certificate is also given.

Interest on Consols for which no certificate has been issued is payable by warrant, and such warrants are transferable by indorsement in the manner provided in the form.

Interest on Consols for which a certificate has been issued is payable to the bearer of the certificate on presentation at any post-office money-order office, or at the Treasury, Wellington (see the last form).

The Act provides for the deposit of money by minors, which may be acceptable to parents as encouraging habits of thrift in children.

The Consols have a currency to the 1st February, 1910, and carry interest at the rate of three pounds ten shillings for every one hundred pounds deposited, and an assured investment of moneys bearing a fair rate of interest for so long a term should secure, when well known, a large portion of the deposits of our thrifty population.

Application for Inscription.

To the Registrar of Inscribed Consols,
Treasury, Wellington.

I [We], , of , having this day deposited at the sum of pounds shillings and pence, for investment in -per-cent. New Zealand Consols, hereby request that the same may be duly inscribed in the books of your office in the name of .

Signature of depositor:
Full address of depositor, together with name of nearest money-order office:

Dated at , this day of 189 .

Deposit duly received as above.

Signature of Receiver: .

Application for Transfer.

In consideration of the sum of , the receipt whereof is hereby acknowledged, I [we], of do assign the sum of pounds

shillings and pence, being my [our] interest or share in the New Zealand -per-cent. Inscribed Consols, under the "The New Zealand Consols Act, 1894," and all my [our] property, right, and interest in and to the same, and the dividends thereon, unto , of , his [their] executors, administrators, or assigns, and the Registrar is hereby requested to transfer the same accordingly. The prescribed fee of is enclosed herewith.

Witness my [our] hand , this day of , 189 .

Signature:

Witnessed by—
Signature:
Occupation:
Address:

I [We], of , do hereby accept the above Consols, and apply for the transfer thereof to me [us].

Signature:

Witnessed by—
Signature:

Application for Consols Certificate.

Place:
Date: , 189 .

To the Registrar of Inscribed Consols,
Treasury, Wellington.

I [We], , of , being the holder of New Zealand Inscribed Consols to the amount of pounds shillings and pence, do hereby make application for a Consols certificate in favour of bearer for the sum of pounds, to be issued to me [us] in accordance with and subject to the provisions contained in "The New Zealand Consols Act, 1894." The prescribed fee of is enclosed herewith.

Signature:

Witness—
Signature:
Occupation:
Address:

Consols Certificate.

No. £

THE bearer of this certificate will be entitled to payment of the sum of pounds sterling upon presentation hereof at the Treasury at Wellington, New Zealand, on the day of , 19 , together with such interest, computed at the rate of sterling per centum per annum, as may be found to be unpaid on the before-mentioned date in accordance with the indorsements of interest-payments made hereon.

The principal and interest are a charge upon and shall be paid out of the accruing income of the Consolidated Fund of the colony.

Interest hereon at the rate of sterling per centum per annum is payable half-yearly, on the and in each year, at any post-office money-order office within the colony.

The amount of interest paid is to be indorsed on the back hereof by the person making such payment.

Dated at the office of the Registrar of Inscribed Consols, Wellington, , 189 .

, Registrar.

Countersigned—
, Controller and Auditor-General.

Entered, folio .

[On the back, indorsements of the half-yearly dividends paid by the Postmaster are to be duly made.]

Dividend Warrant.

To the Treasury at Wellington, or to the Postmaster at any post-office money-order office throughout the colony.

PLEASE pay or order the sum of pounds shillings and pence, being interest for half-year due , 189 , on £ -per-cent. New Zealand Consols.

£ : : . , Registrar.

I hereby acknowledge to have received the above-mentioned sum in full payment of interest for half-year due as above.

Signature:

LAND-TAX AND INCOME-TAX.

BY an Act passed in the session of 1891 the tax levied on property of all kinds was removed, and two taxes substituted in its place: a land-tax on the unimproved value of land and on mortgages, and an income-tax upon the incomes derived from sources other than land or mortgages. The annual revenue from both these taxes has proved to be very nearly the same as that formerly derived from the property-tax, the land-tax and income-tax being the more productive.

THE LAND-TAX.

The substitution of a land-tax and income-tax for the property-tax was more or less tentative at first, owing to the absence of data upon which to base a correct estimate of the value of improvements on land, or as to the probable yield of an income-tax. All improvements were consequently not at first exempted, the limit of exemption being fixed at £3,000; the total improvements were, however, exempted by law before the second collection of the tax.

The yield of the land-tax has been, in round numbers, £280,000 a year, of which about £200,000 represents the yield of the ordinary land-tax, while £80,000 is contributed by the graduated tax and the special tax on absentee land-owners. For 1895–96, in consequence of the reduction in values, the yield of the land-tax was £271,000 only.

For the purposes of the ordinary land-tax, owners are allowed to deduct from the unimproved value of their land the amount of registered mortgages secured upon their land, and the mortgagees are called upon to pay the tax upon the sum total of their mortgages.

An owner is allowed an exemption of £500, if the unimproved value of his land and mortgages, after deducting mortgages due by him, does not exceed £1,500, but the amount of exemption diminishes by degrees, and disappears altogether where the assessed unimproved value and mortgages, less deductions, reaches £2,500.

All these deductions very largely reduce the number of land-tax payers as compared with the number of land-owners, the former being about 13,000 only, while of the latter there are upwards of 90,000.

Mortgages are assessed at their full value, except in cases where, through depreciation of the security or from other cause, it appears that the value of the mortgage has been diminished.

The graduated tax is chargeable on all owners where the unimproved value of the land amounts to £5,000 and over. The scale is given on another page. Mortgages are not chargeable with the graduated tax, nor can they be deducted from the land value chargeable with this tax.

Twenty per cent. additional graduated-tax is levied on owners who have been resident out of the colony for a period of three years or more prior to the date of the passing of the annual Tax Act. This tax brings in about £1,000 a year only.

Under the Assessment Act of 1891 all lands and improvements were valued by Assessors appointed by the Government. To the values thus ascertained owners had the right to object. Owners were required, in addition, to make returns of their land and also of the mortgages due to and by them. Objections, if not allowed by the Commissioner on an Assessor's report, were referred to a Board of Review and either allowed in whole or in part, or disallowed, according to the evidence. The reviewers were, as a rule, chosen from among residents in the neighbourhood acquainted with the values of land.

By the Amendment Act of 1894 periodic triennial assessments were abolished, and the then existing valuations continued, subject to the right of objection and review. Land-owners may call for an assessment of their land not later than the 31st day of March in any year, and the Commissioner has the right to make an assessment of any land in any district at such times as he may choose. All such assessments are subject to the right of objection and review.

The provisions in the earlier Acts still remain in force, whereby an owner, if dissatisfied with the value placed upon his land, may call upon the Commissioner either to reduce the value to the amount at which it is included in the owner's return, or to purchase it at that figure.

If the Commissioner is of opinion that any land has been undervalued, he may call upon the owner to agree to such higher value as he considers to be the true value; and, should the owner not so agree, the Commissioner may, with the approval of the Government, purchase the land at 10 per cent. over the owner's value.

It has been recognised for some time that Native lands in the occupation of European tenants, and mortgages held by Natives, were not exempted from taxation by the original Act of 1891. Whatever grounds there may be for exempting land occupied by Natives as Native land the title to which has not been ascertained,

there does not appear to be any sound reason why Native lands from which rent is being received, and which have benefited equally with other lands from the progress of settlement and the expenditure of public money, should any longer be treated as exempt. It has been determined to collect the ordinary land-tax, at half-rates, through the tenants, who will deduct it from the rents payable. In view of the extreme difficulty of correctly grouping the lands belonging to tribes or individual Natives, and the fact that many of the lands are inalienable, the Government have not considered it advisable to collect the graduated tax on these lands. These provisions were ratified by the Amendment Act of 1895.

Valuations for the purposes of land-tax will in future be made under the provisions of "The Government Valuation of Land Act, 1896." The valuation made thereunder will be available for the collection to be made for the year beginning on 1st April, 1897.

The Income-tax.

Both the number of income-tax payers and the amount of tax received may appear at first sight smaller than might be expected from the population of New Zealand, but it should be remembered that all incomes from land and mortgages are exempt, the unimproved value of the former and the capital value of the latter being chargeable with land-tax. The statutory exemption of £300, *plus* life-insurance premiums up to £50, renders a very large number of employés and small traders exempt from the tax; and, as companies pay the tax on profits, dividends are not returnable by their shareholders. The omission of all incomes derived from rents, mortgages, the use and produce of land, and shares in public companies explains both the smallness of the number subject to income-tax and likewise the comparatively inconsiderable contribution to the revenue.

Objections to income assessments are heard in private before the Stipendiary Magistrate.

It would be impossible to indicate the number and variety of questions which arise daily in connection with income assessments, much less to give any intelligent account of how they are dealt with. The department has endeavoured to lay down certain definite rules for its guidance in the greater number of cases, and a memorandum embodying these has been circulated among all who have been called upon to make returns. It is, however, much too lengthy to introduce here.

Amongst the questions to which special attention has lately been given is that of the depreciation of plant and machinery, and the amount to be allowed as a deduction in this behalf. The Amendment Act of 1894 admitted, amongst deductions, an allowance for depreciation of plant and machinery over and above what might be taken credit for as repairs and renewals. The allowance was, by law, fixed at "what might be considered just by the Commissioner," but the Chief Inspector of Machinery is, in this matter, the expert adviser of the department, and he fixes the rates to

be allowed on the different classes of machinery. There were naturally some differences of opinion between owners of machinery and the department, but in all cases, when the matter has been fully explained, owners have come to see the fairness of the allowance fixed by the Inspector. Only in the case of steam-vessels has the Inspector found it necessary to alter the scale first laid down. The rule formulated for the Inspector's guidance was founded upon English decisions in reported cases, and may be briefly summarised as follows: An allowance should be made of such an amount, over and above what is expended in renewals and repairs, as is sufficient to maintain plant and machinery in a profit-earning condition, although not in that degree of perfection which would make the plant and machinery marketable at its original cost. In other words, it is not contended that the allowance is such as will provide against the loss of capital invested, but merely such an amount as will maintain the plant and machinery in an income-earning condition, where repairs and renewals are insufficient to do so.

Obsolete machinery is also allowed for when the machinery has been actually discarded, and here the amount to be allowed must bear the same proportion to the whole cost as the time the tax has been in operation bears to the life of the machine. An engine discarded in the third year of the tax—the life of the engine being, say, twenty years—would be allowed for to three-twentieths of its original value; less, of course, the annual amounts that had been allowed for depreciation for those three years. Machinery superseded by something better, but kept in reserve in case of a break-down, would not be allowed for.

All through, the allowances for losses, out-goings, expenses, and depreciation are on a more liberal scale than in England.

The department has now succeeded in reaching firms and companies which do business in the colony, but have neither premises, stock, nor any staff worth mentioning. By escaping the tax, such firms and companies were believed to have gained an advantage over their resident competitors.

In order to comply with the law, the agents or representatives of non-resident traders were asked to make a return of all orders or business obtained by them.

In consequence, however, of alleged difficulties in complying with this request, and at the suggestion of several representatives and principals, a fixed sum in lieu of income-tax was substituted, and was authorised by the Act of 1895. The amount was placed at £50 by regulations issued thereunder.

It should be mentioned here that, as in the case of all companies, the statutory exemption of £300 is not allowed to absentees, whether firms or individuals.

Further regulations have been issued for levying income-tax on the profits earned by shipowners whose head-quarters are beyond the colony. The plan adopted is to require a return of the outward

freight and passenger lists, and to levy the ordinary rate of tax upon 5 per cent. of the total returned.

Yield of Tax.

The revenue collected during 1894–95 was £370,000, of which the land-tax contributed £279,000, and the income-tax £91,000. For 1895–96 the land-tax yielded £271,000, and the income-tax £94,000. For 1896–97 the yield of the land-tax will be £272,000, and the income-tax £95,000.

Rates of Tax.

The rates of tax at present are: The ordinary land-tax is 1d. in the pound; the graduated tax commences at £5,000, at ½d. in the pound on the unimproved value, and rises to 2d. where the unimproved value of an owner's land is £210,000, or exceeds that sum. The tax on occupied Native land is ½d. in the pound on the improved value. The rate of income-tax is 6d. in the pound on the first taxable £1,000—*i.e.*, after deducting the £300 exemption—and 1s. in the pound on taxable incomes over £1,000. That is, a person having an income of £1,900 would be thus taxed: £300 would be exempted; £1,000 would pay 6d. in the pound; and the remaining £600, 1s. in the pound: making a total of £55 a year. The tax on an income of £400 would be at 6d. on £100, equal to £2 10s. Income-tax is levied on companies, and agents of absentee principals, at the rate of 1s. in the pound, and no exemption is allowed. The exemption is also disallowed in the case of persons not domiciled in New Zealand.

The schedule of rates of graduated land-tax is given below:—

Where the value is	£5,000 and is less than £10,000,	one-eighth of a penny in the pound sterling.
Where the value is	£10,000 and is less than £15,000,	two-eighths of a penny in the pound sterling.
Where the value is	£15,000 and is less than £20,000,	three-eighths of a penny in the pound sterling.
Where the value is	£20,000 and is less than £25,000,	four-eighths of a penny in the pound sterling.
Where the value is	£25,000 and is less than £30,000,	five-eighths of a penny in the pound sterling.
Where the value is	£30,000 and is less than £40,000,	six-eighths of a penny in the pound sterling.
Where the value is	£40,000 and is less than £50,000,	seven-eighths of a penny in the pound sterling.
Where the value is	£50,000 and is less than £70,000,	one penny in the pound sterling.
Where the value is	£70,000 and is less than £90,000,	one penny and one-eighth of a penny in the pound sterling.
Where the value is	£90,000 and is less than £110,000,	one penny and two-eighths of a penny in the pound sterling.
Where the value is	£110,000 and is less than £130,000,	one-penny and three-eighths of a penny in the pound sterling.

Where the value is £130,000 and is less than £150,000, one penny and four-eighths of a penny in the pound sterling.
Where the value is £150,000 and is less than £170,000, one penny and five-eighths of a penny in the pound sterling.
Where the value is £170,000 and is less than £190,000, one penny and six-eighths of a penny in the pound sterling.
Where the value is £190,000 and is less than £210,000, one penny and seven-eighths of a penny in the pound sterling,
Where the value is £210,000 or exceeds that sum, twopence in the pound sterling.

THE NEW ZEALAND GOVERNMENT LIFE INSURANCE DEPARTMENT.

THE annual report of the Government Life Insurance Department for 1895, which has been presented to Parliament in compliance with the law, affords complete information regarding the financial position of this institution, which has now successfully completed its twenty-sixth year. The Insurance Commissioner says:—

New Business.—During the year, 3,808 proposals, for a total amount of £833,059, were received. Of the whole of the proposals submitted, 381 were deferred or declined. Of every 100 proposals received, 79 were accepted at ordinary rates of premium, 11 were loaded—*i.e.*, accepted with an extra premium, and 10 were deferred or declined. Of every 100 policies completed, 94 were at ordinary rates, and 6 with an extra premium, or the equivalent contingent debt. There were also granted 38 annuities, securing to their holders £1,513 per annum.

The following is a condensed summary of the new policies issued by the department during the year:—

—	No.	Sum assured.	Annual Premium.
		£	£
Whole-life and term assurances ..	964	235,395	6,250
Endowment assurances	1,401	262,349	9,546
Double-endowment assurances ..	400	100,900	2,853
Children's endowments	30	3,404	131
Annuity assurances	41	6,000*	327
	2,836	£608,048	£19,107
Annuities	38	£1,513 per annum.	18†
Total policies	2,874	..	£19,125

* And deferred annuities securing £2,052 per annum.
† And single premiums amounting to £16,042.

In the General Section the policies issued were 2,391, assuring £518,173; and in the Temperance Section 483 policies, assuring £89,875. The particulars of the new and discontinued business of the year, and the progress of the department from its inception, are given in detail in the annexed statement of progress of business.

Civil Service Insurance Scheme—There are now in force 113 policies under the Civil Service Insurance Regulations, insuring £19,848, and entitling the survivors at age 60 to annuities amounting to £3,998 per annum.

Premiums received.—The total new premiums received amounted to £19,938. The renewal premiums received amounted to £230,052, being £10,745 in excess of the previous year. The consideration for annuities granted during the year was £16,042.

Interest.—The interest earned during the year amounted to £119,973, being £4,703 in excess of the interest for the previous year.

Total Revenue.—The total revenue from all sources showed the substantial increase of £16,534, and amounted to £386,012.

Claims under Policies.—Death claims arose under 271 policies, through the deaths of 248 policy-holders, representing, after deduction of contingent debts, a total sum assured, including bonus additions, of £99,689. Matured endowment assurances and children's endowments amounted to £28,289. Since its foundation the department has paid over £1,250,000 sterling in the liquidation of insurance claims.

Expenses of Management.—The expenses of management, including commission £12,544, and land- and income-tax £6,623, amounted to £50,462. There has thus been an absolute decrease of £5,260 in the year's expenditure, representing a reduction of about 3 per cent. in the ratio of expenses to premium income.

Accumulated Funds.—The funds have increased by £164,006, and at the end of the year amounted to £2,428,245. This is the largest increment in any one year since the foundation of the department. The total assets now amount to £2,499,190, and on the 31st December, 1895, were invested as follows:—

Class of Investment.	Amount.	Percentage of Total Assets.
	£	Per Cent.
Government securities	916,988	36·7
Mortgages on freehold property	662,315	26·5
Loans on policies	441,959	17·7
Local bodies' debentures	167,435	6·7
Landed and house property	164,986	6·6
Miscellaneous assets	77,934	3·1
Cash on current account	67,573	2 7
	£2,499,190	100·0

General Remarks.—The most noticeable feature of the business of the year 1895 has been a marked decline in the expenses of management. In proportion to the premium income of the department the rate of expense has declined during the year from 22 per cent. to 19 per cent., and in the last six years the reduction in the ratio of expenses to premium income has been more than 6½ per cent.

The department has, in common with other institutions, experienced a slight fall in the rate of interest earned on its funds, as was to be expected in view of the general tendency in that direction. Having regard to the lower rates ruling in other investments the department has considered it right to reduce the rates charged to policy-holders for advances on the security of their policies.

The new insurances of the year, although a little less than in 1894, amounted to considerably over £600,000 sterling, which is a greater business than that transacted by the majority of British life offices. Considering the very limited population to which the operations of the department are confined, the yearly increase in the business in force is highly satisfactory, as may be seen from the following table of total assurance in existence at different periods:—

Year.	Insurance in Force.
	£
1870	30,000
1875	1,837,000
1880	4,172,000
1885	6,552,000
1890	7,808,000
1895	9,345,000

The total insurances, therefore, amount to £9,345,000. Of this, £3,365,000 relates to endowment insurances, and the amount of provision for old age or early death thus made by New-Zealanders in the Government office alone is greater than the similar provision made by the policy-holders of any English office, with two exceptions.

The insurance discontinued from all causes during the year shows a decrease of £100,000 as compared with the discontinuances of 1894.

The success of the department's efforts to induce policy-holders to maintain their policies in force is shown by the following table, from which it will be seen that the lapses and surrenders have declined from 7·3 per cent. of the total business in force in 1885 to 3·9 per cent. in 1895:—

Year.	Insurance in force.	Insurance terminated by Lapse and Surrender during the Year.	Percentage of Lapses and Surrenders to Insurance in force.
	£	£	
1885	6,552,000	479,000	7·3 per cent.
1890	7,808,000	408,000	5·2 " "
1895	9,345,000	369,000	3·9 " "

The actuarial valuation, which is due at the end of the current year, is now in progress, and efforts will be made to declare the triennial bonus as early as possible next year.

The latest revenue account and balance-sheet of the Department are given hereunder.

REVENUE ACCOUNT OF THE GOVERNMENT LIFE INSURANCE DEPARTMENT FOR THE YEAR ENDED 31ST DECEMBER, 1895.

	£ s. d.		£ s. d.
Amount of Funds at 31st December, 1894	2,264,239 4 11	Death claims under policies, Assurance, including bonus additions	99,688 19 0
Renewal premiums—Assurance, Annuity, and Endowment	230,052 7 11	Endowment Assurances matured, including bonus additions	27,663 7 0
New premiums (including instalments of first year's premiums falling due in the year)	18,051 13 9	Endowments matured ...	625 8 0
Single premiums—Assurance and Endowment	986 15 8	Premiums returned on endowments	23 6 8
Consideration for annuities	16,041 11 2	Bonuses surrendered for cash	2,842 3 7
Interest	119,973 4 5	Annuities	8,729 18 4
Fees	6 8 10	Surrenders	22,282 12 9
		Loans released by surrender	9,688 2 7
		Commission—	
		New ... £10,946 6 4	
		Renewal ... 1,597 19 5	
			12,544 5 9
		Land- and income-tax ...	6,622 14 7
		Expenses of management ...	31,295 6 11
		Amount of funds at 31st December, 1895	2,428,245 1 6
	£2,650,251 6 8		£2,650,251 6 8

BALANCE SHEET OF THE GOVERNMENT LIFE INSURANCE DEPARTMENT ON 31ST DECEMBER, 1895.

Liabilities.	£ s. d.	*Assets.*	£ s. d.
Total Assurance, Annuity, and Endowment Funds (as per Revenue Account) ...	2,428,245 1 6	Loans on policies	441,959 3 9
Claims admitted, proofs not yet completed	15,243 19 0	Government securities ...	916,988 1 0
Commission	839 2 11	Municipal Corporation debentures	106,691 6 1
Medical Fees	647 17 0	County securities	1,000 0 0
Premium and other deposits	3,256 12 7	Otago University debentures	15,000 0 0
Tontine Savings Funds ...	7,957 13 0	Harbour Board debentures ...	43,809 2 10
Reserve for possible depreciation in freehold and mortgage securities ...	43,000 0 0	River Board debentures ...	435 0 0
		Town Board debentures ...	500 0 0
		Landed and house property ...	132,586 10 11
		Office furniture (Head Office and Agencies)	3,882 11 3
		Mortgages on property ...	662,314 10 6
		Properties acquired by foreclosure	32,399 19 5
		Overdue premiums on policies in force £7,359 3 3	
		Outstanding premiums due in December, 1895 ... 29,166 7 0	
			36,525 10 3
		Interest outstanding 3,476 19 0	
		Interest accrued, but not due ... 28,940 9 3	
			32,417 8 3
		Agents' balances	3,624 9 8
		Sundry accounts owing ...	1,483 17 1
		Cash in hand and on current account	67,572 15 0
	£2,499,190 6 0		£2,499,190 6 0

In connection with the appalling disaster by which the lives of sixty-seven miners were lost, through the explosion in the Brunner Mine on the 26th of March last, it may be of interest to learn that the Department held insurances on the lives of no less than nineteen of the victims of the accident. Unfortunately, in the case of one of the policy-holders, the insurance had been allowed to lapse; but in the case of the others the policy-moneys will no doubt afford acceptable assistance to the widows and orphans so suddenly deprived of their bread-winners. Although not falling within the operations of the year, the magnitude and recent date of the disaster are an excuse for making this reference thereto.

THE PUBLIC TRUST OFFICE OF NEW ZEALAND.

Constitution and Objects.

The Public Trust Office was constituted by "The Public Trust Office Act, 1872." The original scope of the office and the powers of the Public Trustee have since been much enlarged, to enable the office to perform the various services and the Public Trustee to exercise the responsible and important functions for which "The Public Trust Office Consolidation Act, 1894," now provides the necessary authority.

The office is designed mainly to afford, at low rates of commission, a secure and convenient recourse in every case where a person residing either in New Zealand or abroad, and desiring to form a trust or appoint an agent or attorney in the colony, may be in doubt or difficulty as to the choice of a trustee, executor, agent, or attorney. The office is also designed to relieve those who may be appointed trustees of property in the colony, or who, after having accepted the trusts of such property, may, for various reasons, be unwilling or unable to undertake or continue the administration.

The appointment, however, of the Public Trustee, otherwise than to the administration of an intestate estate, is subject to the consent of the Board of the Public Trust Office; and the Public Trustee cannot under any circumstances accept an appointment jointly with any other person.

An appointment to be sanctioned by the Board should be such as the Public Trustee can, in the interests of the office and of the public service, be expected to carry out satisfactorily, and such as will not cast upon the office the odium of a faulty administration for which the Public Trustee would not really be responsible, or encourage private persons to undertake trusteeships with the ultimate intention of transferring them to the office as soon as they may become embarrassing.

"The Public Trust Office Consolidation Act, 1894," itself affords

in sections 12, 13, and 14, as clearly, succinctly, and comprehensively as any other form of words could do, a general idea of the object of the Public Trust Office, and of the nature of the business which the office may undertake. Those sections provide as follows:—

12. Where the Crown, the Governor in Council, or the Governor, or a public officer, or a Court, Judge, public or private corporate body, or any person, now or hereafter can appoint a trustee, executor, administrator, guardian, committee, agent, or attorney, any of such appointments may be made of the Public Trustee if he consents thereto. The duties and rights of the Public Trustee under any appointment shall be the same, subject to the express provisions of this Act, as if the appointment had been made of a private person.

13. With the consent of the Supreme Court or a Judge thereof—

Trustees, whether appointed before or after the coming into operation of this Act, may, unless expressly prohibited, and notwithstanding the terms of the trust as to the number of trustees, appoint the Public Trustee sole trustee in their place;

Executors, whether appointed before or after the coming into operation of this Act, may, unless expressly prohibited, before or after taking out probate, appoint the Public Trustee sole executor;

Administrators, with or without a will annexed, whether appointed before or after the coming into operation of this Act, may, unless expressly prohibited, appoint the Public Trustee sole administrator;

Where there are more trustees, executors, or administrators than one, any one trustee or executor (whether before or after proving a will), or any one administrator, may apply to the Supreme Court or a Judge thereof to have the Public Trustee appointed sole trustee, executor, or administrator. All applications to the Supreme Court or a Judge thereof under this section may be by petition, or in such other manner as by rules made under section twenty-eight of this Act may be provided; and the Court or Judge may, and is hereby given jurisdiction to, make such order as it or he thinks fit.

Where to the appointment of a trustee, executor, or administrator the consent of any person is requisite, and such person refuses to consent to the Public Trustee being appointed, or where the person to consent is an infant, idiot, or lunatic, or a person of unsound mind, or is absent from the colony, or is under any other disability, then an appointment of the Public Trustee may be made without such consent, if a Judge of the Supreme Court consents thereto.

Where the Crown, the Governor in Council, the Governor, or any public officer, or any Court or Judge, or any corporate body or association, or person, whether public or private, within or without the colony, desires to or can create any trust, then, unless expressly prohibited, the Crown (by the Governor), the Governor in Council, the Governor, or such public officer, Court, or Judge, corporate body, association, or person may, for the purposes of such trust, appoint the Public Trustee trustee, upon such trusts, and under and subject to such powers, provisions, and conditions, as shall be expressed.

Upon any appointment of the Public Trustee under sections twelve and thirteen of this Act, then, by virtue of the appointment, all property, rights, powers, and functions shall, without any conveyance or assignment, become thereby vested in the Public Trustee.

The Public Trustee, when appointing or acting under this Act as trustee, executor, administrator, guardian, committee, agent, or attorney, shall have the same rights and immunities as a private person acting in any of those capacities would have.

14. The Public Trustee, upon the death of any person domiciled in New Zealand, or who has property in New Zealand, who has died or shall hereafter die within New Zealand or elsewhere intestate, shall, if he thinks fit to apply therefor, be entitled to administration.

The application may be made in any judicial district of the Court at the discretion of the Public Trustee.

Upon such application, no further proof of the death and intestacy of any person shall be required than an affidavit that, after due inquiries, the Public Trustee is satisfied that such person died intestate.

The Public Trustee shall be entitled, as of right, to such administration: Provided that if some other person within the colony who, if it were not for this section, would be entitled to such administration, applies for such administration, then the Court or Judge may grant administration to such person: Provided that it shall not be necessary for the Public Trustee, nor shall the Court or Judge require him, to give notice of such application to any such person.

THE SECURITY.—CAPITAL FUNDS AND INTEREST GUARANTEED.

The security and fidelity of the administration of the Public Trustee cannot but form a great attraction to any person who may contemplate the appointment of a trustee, executor, administrator, agent, or attorney. The Public Trust Office is a department of the Government service. The good faith of the administration is guaranteed by statute, and the colony is pledged to maintain the integrity of capital funds placed in the Public Trust Office, either without any direction for investment, or to be invested at the option of the Public Trustee in any of the securities in which, unless expressly prohibited, he may invest all capital—that is, in any of the securities authorised by section 31 of the Consolidation Act as amended by the Act of 1895:—

(1.) In the Government securities of the United Kingdom, or of any colony or dependency thereof, issued under the authority of the Parliament or other legislative authority of the said kingdom, colony, or dependency respectively, and secured upon the public revenues thereof:

(2.) In debentures issued by any local authority under any law now or hereafter in force, secured upon general or special rates, or upon real estate held in fee-simple free from encumbrances, or upon the rents and profits of real estate held in fee-simple free from encumbrances: Provided that no greater advance shall be made where the debentures are secured upon real estate than three-fifths of the value of such real estate; and if the debentures are secured upon rents and profits, then no advance shall be made unless such rents and profits are sufficient to pay two-thirds more than the annual interest payable in respect of the advance:

"Local authority" means, for the purposes of this subsection, the Council, Board, or other authority of a city, borough, county, town district, road district, drainage district, harbour district, or river district, now or hereafter constituted under an Act of the General Assembly:

(3.) In advances by way of mortgage on the security of any real estate held in fee-simple within the colony and free from all encumbrances, to an amount not exceeding three-fifths of the estimated value of such estate, according to a valuation approved by the Board:

(4.) In fixed deposits in any bank of issue created or established by or under any Act of the General Assembly, or by Royal Charter, and carrying on business in the colony, or in the Post-Office Savings-Bank, or other savings-bank established in New Zealand in accordance with any law affecting such banks.

The colony further guarantees on the capital funds arising from the estates in the office, and available for investment at the discretion of the Public Trustee, a common rate of interest, to be determined from time to time by Order in Council, and to be credited quarterly, *free of all office charges of the Public Trust Office*,

to the properties from which the funds arise. Thus the funds are afforded a STATE GUARANTEE,—

1. Against loss from investments in bad or insufficient securities;
2. Against loss from delay in the investment;
3. That the interest determined from time to time by Order in Council shall be regularly and punctually paid, *free of all charges of the Public Trust Office.*

A person making a will, or arranging a trust, or proposing the appointment of an agent or attorney, must always be seriously concerned as to the security of the funds; and the larger the amount of the funds the greater will be the concern for security, and the less for the rate of interest. Private executors, trustees, or agents, or attorneys whose administration or conduct should be at fault, may be without the means of repairing the errors for which they are accountable; or may, in cases where their acts are justifiable, make disastrous and ruinous investments.

Those who, desiring to appoint a trustee or executor, may be fortunate enough to have among their friends one both qualified and disposed to undertake the required administration, are often unwilling to impose this responsibility upon any private person; and such will be the case even where the reluctance is not due to any concern for security, or to any fear of such a contingency as the death, or infirmity,or incapacity of the proposed trustee.

The Public Trustee, in his official capacity, never dies, never leaves the country, and never becomes disqualified or involved in private difficulties, or distrusted. By his appointment as trustee, executor, administrator, agent, or attorney, the preparation of the numerous deeds, and the consequent expense, which might become unavoidable in the case of a private appointment, are rendered unnecessary. These advantages will be readily appreciated by all who have had any experience of private appointments.

SPECIAL POWERS OF THE PUBLIC TRUSTEE.

If after the death of a person leaving a will, of which the Public Trustee is not appointed executor, three months should elapse without an application being made for probate or administration, the Public Trustee may, on applying, obtain letters of administration, unless the person entitled to probate should then apply or give satisfactory reasons for the delay. As to the estates of persons dying intestate in New Zealand or elsewhere, and domiciled in or having property in the colony, the Public Trustee is entitled as of right to the administration in cases where the persons who would otherwise be entitled to administer neglect to apply for or fail to obtain the necessary authority.

When an intestate estate to be administered by the Public Trustee is of no greater value than £250, he is authorised to assume the administration by filing in the Supreme Court an election to administer. To estates of small value it is of no little importance

that the Public Trustee should be thus empowered to save them from the expense of letters of administration.

For the purposes of the administration of an estate where the Public Trustee may be appointed trustee, executor, administrator, guardian or committee, or may be otherwise authorised to act under the Public Trust Office Consolidation Act, he may, where he is not prohibited by statute or instrument, and without the consent of the Supreme Court, do everything in general that a prudent owner might be reasonably expected to do, except to sell, lease, dispose of, or borrow money upon real estate of value exceeding £500. These powers enable the Public Trustee not only to avoid delays and interruptions in the course of his management of an estate and the expense which may thus be occasioned, but to save to the estate the profit which only the possession of such powers would make it practicable to save.

The Public Trustee may at any time exercise the necessary powers of executor or administrator for the protection of an estate, and his authority to assume this temporary power extends to testate as well as intestate estates. This authority is highly serviceable to the interests of estates in every case where a property may be suffering, or in danger of suffering, injury through neglect or delay to take out probate or administration. The security of property is strengthened by the existence of a power to protect, which can be invoked when protection is required.

The Public Trustee may further use a large discretion in the application of the residue of intestate estates; and he is in like manner empowered to apply, consistently with the provisions of the instruments under which he is acting, the shares of testate or trust estates towards the maintenance, education, or advancement of the beneficiaries.

Thus, in the case of an intestate estate, the Public Trustee may deal thus with the net residue:—

(1.) When not exceeding £200, he may apply it to the maintenance, &c., of the widow or infants:

(2.) When not exceeding £50, he may pay it wholly to the widow:

(3.) When there are infants entitled, and the share of an infant does not exceed £50, he may pay such share to the widow or other person for the maintenance of the infant:

(4.) When the person entitled to the residue does not claim it within three years after the death of the intestate, and the Public Trustee does not know or is unable to ascertain the existence of any next-of-kin, he may pay or transfer it wholly to the widow:

And in the case of testate or trust estates, where provisions are not expressly made for the maintenance of an infant, or where provisions are not expressly made to the contrary, the Public Trustee may apply—

(5.) The whole or part of income to which an infant is entitled in possession to the maintenance of the infant;

(6.) The capital share to which an infant is entitled in possession to the maintenance of the infant;

(7.) The half, or to the extent of £500, of the *capital share* to which an infant is entitled in reversion immediately expectant on a prior life-interest to the maintenance of the infant, on the written consent of the person having such life-interest;

(8.) The presumptive or contingent shares of infants in the capital and income towards the maintenance of the persons of the class to whom such capital and income would be payable in certain contingencies, with the consent of the persons having prior estates or interest.

The special powers of the Public Trustee in respect to testate and trust estates—powers with which private trustees could not expect to be clothed, but which may be safely granted to an officer in the position of the Public Trustee—enable him to supply promptly and inexpensively what may be described as deficiencies or omissions in instruments of trust, and thus, so to speak, perfect an incomplete will or settlement; enable him to make, for instance, the maintenance of infants, for whose benefit an estate is to be administered under a will containing no directions for maintenance, such a charge on the estate as the testator must, from the circumstances of the case, be supposed to have intended.

The advantage which estates in the Public Trust Office must unquestionably derive from the Public Trustee's possession of such large powers of general administration affords another powerful argument in favour of the office. To sum up, in New Zealand the law provides for the estates of deceased persons a choice between two administrations: one an administration by private trustees, necessarily restricted in their powers, and subject to all the contingencies of private management; the other an administration by the Public Trustee, in which he is authorised to exercise large discretionary powers in the interest of the estates, and in which the integrity of the capital funds and his own good faith are guaranteed by the colony.

The Public Trustee as Agent or Attorney.

The Public Trustee's authority to accept the appointment of agent or attorney—that is, to act in effect as a public attorney, for whose conduct the colony is responsible—enables him to render a great variety of services of a temporary and subordinate character, services for which he could rarely be employed without such authority, owing to the expense in that case of the necessary deed of trust. To persons leaving the colony for a time, or desiring for other reasons to arrange for the temporary management of their property, the Public Trust Office must prove a convenience, especially in cases where the appointment of any other agent or attorney would be unsatisfactory.

As agent or attorney for a property that may eventually become subject to a will of which he is executor, the Public Trustee acquires knowledge of great service to his ultimate administration. The person, for example, who may appoint the Public Trustee to be trustee or executor under a will, and afterwards, while yet living, may desire to be relieved of the care and management of the relative property, will find in this authority of the Public Trustee to act as agent or attorney a provision by which the desired relief can be secured through the future administrator of the estate; and the Public Trustee will, as agent or attorney, obtain a knowledge of all the circumstances of the property, and continue the ultimate administration with the profit and advantage which the estate must obviously derive from that knowledge.

General.

The draft of a will, deed of trust, settlement, or power of attorney, in which the Public Trustee is to be appointed executor or trustee, agent, or attorney, will, when required, be examined in the Public Trust Office free of charge, for the purpose of bringing to light any provisions which may be ambiguous, or such as the Public Trustee could not follow; and testators who may appoint the Public Trustee to be their executor should therefore submit their wills to him for the purpose of finding out whether the Board would be likely to accept the trusts, and of obtaining, without expense, a careful consideration of any objections.

Any property can be vested in the Public Trustee upon trusts defined in the deed creating the trust, and the income from such property can be paid as may be desired.

Wills of living persons, whether under such wills the Public Trustee is or is not appointed executor, may be deposited in the office for safe custody. The Courts of the colony competent to grant probate or letters of administration refer, in the case of any application for such probate or letters, to the list of wills in the Public Trust Office; so that the deposit of a will with the Public Trustee insures that it shall be forthcoming on the death of the testator, and when the administration of the relative estate becomes necessary.

In the very large number of cases where persons die intestate it is, as already stated, the duty of the Public Trustee to administer if the person who is otherwise entitled to administer neglects to apply for or fails to obtain letters of administration. Almost all who have realised the care and responsibility inseparable from the administration of an estate, and who understand what services the Public Trust Office is capable of rendering, and what relief may be obtained through the agency of the office, would prefer to allow an estate in which they may themselves be interested, or which they are expected to manage, to be administered by the Public Trustee. After the assets of an intestate estate have been realised and the debts and expenses paid, the Public Trustee, on receiving

satisfactory proofs of kinship, distributes the residue in accordance with the law. If the relatives have to be found, the Public Trustee takes active steps to trace them.

The Public Trustee is authorised by "The Lunacy Act, 1882," to undertake the administration of the estates of lunatics in every case where no committee may be appointed for the estate; and by "The Lunatics Act Amendment Act, 1895," he is authorised to exercise large powers in such administration. He may, where the value of the estate does not exceed £500 exclusive of debts or other charges, administer without being required, as formerly, to obtain the previous sanction of the Supreme Court, and administer, consequently, with an economy to the estate and a benefit to the family of the lunatic such as would seldom result from any but a competent administration by a member of the lunatic's family. The property, wherever situated, of a lunatic in the colony vests in the Public Trustee in the same manner as it vests in him when he is appointed Committee of the lunatic's estate by the Supreme Court. Every private committee of a lunatic's estate is required to render to the Public Trustee, at such times as he shall prescribe, an account of the affairs of the estate and of all the transactions of such committee; and five days' notice is to be given to the Public Trustee of any application to appoint a committee of a lunatic's property. The Public Trustee must, therefore, exercise, with respect to the estates of lunatics in the colony which may not be administered by him, a supervision which cannot but operate favourably to the interests of those estates. It may be remarked as an interesting fact that of the estates of the lunatics in the asylums of the colony fully 90 per cent. are administered by the Public Trustee.

For the purpose of the administration of statutory trusts the Public Trust Office renders very valuable and important services to the Government and to the colony. It is, and must obviously be, of great moment to the public that the administration of many funds and properties should be such as to leave no doubt that the directions of the trust will be faithfully observed. Where a fund or property of which the Government may desire to create a trust is not specially authorised by statute to be placed in the Public Trust Office, the purpose is served by the execution of an ordinary trust instrument.

The administration of the Public Trustee is exposed to a stronger light of public criticism than the administration of a private trustee could be, and any reasonable complaints from the beneficiaries, or from any one, would be echoed by the Press as matters of public concern; and these considerations must be sufficient to insure a careful and strictly conscientious observance by the Public Trustee of his obligations.

The reputation and services of the office have attracted attention in the United Kingdom and in other countries, and several trusts of money belonging to persons resident abroad have already been accepted by the office.

nd value of the estates of each class in the Public Trust Office were, at the close of 1893, and on the 31st March, 1895 and 1896, as shown in the following table:—

D VALUE OF ESTATES IN PUBLIC TRUST OFFICE, DECEMBER, 1890, TO MARCH, 18

	Number of Estates						Value of Estates				
	On 31st Dec., 1890.	On 31st Dec., 1891.	On 31st Dec., 1892.	On 31st Dec., 1893.	On 31st Mar., 1895.	On 31st Mar., 1896.	On 31st Dec., 1890.	On 31st Dec., 1891.	On 31st Dec., 1892.	On 31st Dec., 1893.	On 31st Mar., 1895.
							£	£	£	£	£
luding unts)	288	343	354	371	392	447	418,047	415,160	442,671	543,239	586,81
..	752	794	845	868	850	812	75,305	83,381	81,650	84,436	80,28
..	109	114	117	117	113	91	23,496	24,190	22,706	23,465	22,46
..	137	181	202	271	335	434	32,918	34,913	40,380	51,278	72,70
..	99	100	101	102	103	107	340,869	344,692	346,499	348,500	350,00
nt Re-	293	293	293	293	293	293	349,462	350,289	350,839	400,000	450,00

Charges.

The commissions and charges which the Public Trustee is authorised to levy for the services of the Public Trust Office are calculated to be no more than sufficient to meet the expense of maintaining the department without loss; and it will be found that the charges for the administration of a property by the Public Trustee will compare very favourably with the expense of an administration by any other agency.

STATE INSTRUCTION.

By Rev. W. J. Habens, B.A., Secretary for Education.

The provision made in New Zealand for public instruction under "The Education Act, 1877," is on a liberal scale. The whole cost of primary schools is borne by the State; the instruction imparted in them is wholly secular; and the Committee of any school may bring into operation, within its district, certain sections of the Act for the purpose of compelling parents to send their children to school. The primary schools, "public schools" as they are designated in the Act, number 1,464. The salaries of teachers at the rates in force at the end of 1895 amounted to £338,774. The number of teachers receiving not less than £400 each was 5; 62 others were in receipt of not less than £300 each; 222 had less than £300, but not less than £200; 1,223 had less than £200, but not less than £100; and 2,064 (including 1,020 pupil-teachers and 190 teachers of sewing) had less than £100 each.

The country is divided into thirteen education districts, over each of which an Education Board presides, and into smaller districts, in each of which a School Committee, elected by the householders, has authority, subject to the general control of the Board. The Board is elected by the School Committees. The Board of an education district receives and disburses the money voted by the General Assembly for purposes of primary instruction, and, after consulting with the Committee of the school district, appoints the teachers. The Boards also appoint the Inspectors; but the Inspectors work under regulations made by the Governor in Council, who also makes the regulations under which the Minister grants certificates to teachers after examination and adequate experience.

The sum of the numbers on the rolls of the several schools at the end of 1895 was 129,856. Of this number there were 32,387 in preparatory classes, and 4,307 pupils who had passed the Sixth (the highest) Standard, leaving 93,162 in the standard classes.

The numbers in the several standard classes, beginning with the class to be next presented for examination in the First Standard, were: 16,896, 17,408, 19,223, 18,055, 13,440, 8,140. Boys and girls

are in the proportion of 51·8 to 48·2; and pupils under ten years old to pupils above ten are as 51·9 to 48·1. More than 95 per cent. of the pupils receive instruction in drawing, and about 85 per cent. of the girls are taught needlework.*

The regular income of the Boards consists of a capitation allowance of £3 15s. a year for every unit of average attendance, together with a capitation grant of not more than 1s. 6d. for the maintenance of scholarships tenable in secondary schools, and a grant in aid of inspection. A parliamentary grant (varying considerably from year to year) is distributed among the Boards, and expended by them on the erection of school-buildings. The following statement shows the aggregate income and expenditure of the thirteen Boards for the year 1895:—

Dr.	£	s.	d.	Cr.	£	s.	d.
To Balances, 1st January, 1895 ..	42,396	18	8	By Board's administration	11,481	19	3
Government grants—				Inspection and examination ..	13,127	5	10
Maintenance ..	379,610	16	10	Teachers' salaries and allowances, and training	342,368	8	1
Buildings ..	44,603	1	4	Incidental expenses of schools	32,687	10	7
Reserves revenues ..	39,828	11	1	Scholarships ..	7,449	6	6
Local receipts—				Interest	82	7	3
Fees, donations, &c.	2,369	2	3	Buildings, sites, plans, &c.	45,251	0	2
Rents, sales, &c. ..	856	11	11	Refunds and sundries	4,651	0	6
Interest	348	8	0	Balances	53,241	6	3
Refunds, deposits, &c.	326	14	4				
Total ..	£510,340	4	5	Total ..	£510,340	4	5

The secondary schools of the colony are not supported directly by the State, nor are they open to all pupils without charge. Some of these schools have endowments of land, originating in agreements between colonising companies and the early settlers, or in State grants; and some receive aid from the School Commissioners, who administer the public reserves for education. At the end of 1895 there were twenty-four schools, with an average attendance of 2,426 pupils. The aggregate income of these incorporate schools from school-fees (not including boarding-fees) was £22,202, and from endowments, £25,250.

The University of New Zealand is a corporate body which does not itself maintain a staff of professors or lecturers, but has its functions restricted to the encouragement of learning by the conferring of degrees and certificates of proficiency, and by a liberal

* NOTE.—School children not over fifteen years of age, living in a neighbourhood where there is a railway-station but no public school, can obtain free second-class tickets to and from a station in the neighbourhood of the nearest primary school; and all children under fifteen can obtain free tickets to enable them to attend a private school. Also, second-class tickets are issued at 10s. a quarter to children under sixteen, to enable them to go to any school their parents choose.

system of scholarships. The University has a statutory grant of £3,000 a year from the Treasury, and an income of about £2,000 from the fees paid for examination and degrees. Members of Senate were formerly nominated by the Governor, but vacancies are now filled up by election, the right of election being exercised alternately by the Senate and by the Convocation or body of graduates. There are three institutions in which most of the undergraduates keep terms and receive instruction: the University of Otago, founded and endowed by the Provincial Government of Otago; Canterbury College, similarly instituted by the Provincial Government of Canterbury; and Auckland University College, established by Act of Parliament since the abolition of provinces, and endowed with a statutory grant of £4,000 a year. The number of students at each of these institutions in 1895 was as follows: Otago University, 226; Canterbury College, 307; Auckland University College, 135. The number of graduates by examination is now 559.

In connection with Otago University there is a Medical School, and also a School of Mines; and in connection with Canterbury College there is an Engineering School. Information supplied by the authorities of these institutions, and of the Canterbury Agricultural College, is appended to this article.

The Department of Education, over which the Minister of Education presides, is charged with the general administration of the public-school system. It has also the direct management of 70 Native schools (with about 2,600 pupils), of industrial schools, and of an institution for deaf-mutes (conducted on the pure oral system); and it takes an active interest in the instruction of the blind.

At the end of 1895 there were 1,545 names on the books of the industrial schools: of these children, 560 were in the schools, 416 boarded out, 419 at service, and 103 on probation with friends. Each boarded-out child is under the eye of a lady visitor, who reports once a month. The children sent to these schools are some of them merely indigent; others are vagrant; some have committed offences rendering them liable to imprisonment; some have been taken from disreputable homes. In every case the manager of the school is the legal guardian of an inmate, and the guardianship continues until the inmate is discharged by warrant under the hand of the Governor, or reaches the age of twenty-one.

"The Manual and Technical Elementary Instruction Act, 1895," provides for the granting of subsidies to classes established for instruction in such branches of science and art as are encouraged by the Science and Art Department, South Kensington, and the City and Guilds of London Institute, and also to workshops connected with public schools; and the same Act allows part of the ordinary school time to be given to elementary manual instruction. At the examinations of the Department and the Institute in 1895 there were 717 candidates and 488 passes.

THE SCHOOL OF MEDICINE, UNIVERSITY OF OTAGO.

The School of Medicine of the University of Otago was founded in 1876, when arrangements were made for teaching the subjects belonging to the first two years of a medical course. In 1883 steps were taken to complete the curriculum, and for more than ten years the school has been in full working-order. A complete five years' course of instruction is now available for those who wish to pursue their studies in this country; and the degrees in medicine of the University of New Zealand are granted to students of the school on passing the required examinations. A similar full recognition of the courses of study has been accorded by the Royal College of Physicians and Surgeons of England, while the instruction given has been recognised, though not so fully, by the Scottish universities and by the University of Cambridge.

The medical year consists of two sessions—a winter session, extending from May to November, and a summer session, from December to March.

The following is the list of classes:—

Biology ..	.. Practical biology.
Physics ..	.. Practical physics.
Chemistry ..	.. Practical chemistry.
Anatomy ..	.. Practical anatomy.
Physiology ..	.. Practical physiology and histology.
Pathology ..	.. Practical pathology and bacteriology.
Materia medica.	
Surgery ..	.. Clinical surgery.
Medicine ..	.. Clinical medicine.
Midwifery ..	.. Diseases of women.
Medical jurisprudence ..	Public health.
Diseases of the eye.	
Mental diseases.	

The Dunedin Hospital is available for the use of teachers and students; and clinical instruction in surgery, medicine, diseases of women, diseases of the eye, &c., is given there daily by the medical and surgical staff.

There are at present fifty-six students attending the various classes.

THE SCHOOL OF MINES, UNIVERSITY OF OTAGO.

This institution was opened for students in the year 1879, but its teaching-staff and equipment were not completed until 1887. It is under the direct control of the Professorial Board of the University, being represented on this Board by the Professor of Mining and Mineralogy, who, in addition to the duties of his chair, has the function of director of the school in everything that concerns its inner management and working. The director must, however, submit to the consideration of the Professorial Board any changes in the established regulations and plan of instruction which he may consider advisable, as well as the granting of diplomas and certificates to students; and he has also to prepare an annual report on the work and the results of the school for submission to the Chancellor and Council of the University.

For the purposes of the school, lectures and practical instruction are given by five professors and four lecturers in the following subjects: Mathematics, physics (lectures and laboratory practice), theoretical mechanics, applied mechanics, chemistry (lectures and laboratory practice), biology (lectures and laboratory practice), palæontology, general geology, mining geology, mineralogy, petrography, mining, general and special metallurgy, blowpipe analysis, assaying, mine- and land-surveying (with field practice), and drawing, comprising freehand and mechanical drawing and practical geometry, in which three branches students receive instruction at the Dunedin School of Art.

There are five divisions in the mining school—viz.: I., the mining; II., the metallurgical; III., the geological; IV., the mine- and land-surveying;

and V., the assaying divisions—for each of which the courses of study are specially arranged; but mathematics, physics, chemistry, mineralogy, blowpipe analysis, general geology, and drawing, form subjects of study for the students of all divisions. Besides going through the prescribed curricula, students of some of the divisions have also to fulfil certain other requirements—namely, that they produce satisfactory evidence of having for fixed periods been engaged in practical work, and that they obtain certificates of "first aid" by attending a course of ambulance lectures. Thus, students of the mining division have to work for twelve months in metal- and coal-mines; those of the metallurgical division for nine months in ore-dressing and metallurgical works; and those of the surveying division require to be employed for at least six months in the practice of mine- and land-surveying. The producing of "first aid" certificates is compulsory only for students of the mining and metallurgical divisions.

For the mining, metallurgical, and geological divisions the course of study can be completed in three years, and in the surveying and assaying divisions in two years. The session commences, like those of the arts and science courses, in the first week in April, and examinations in the different branches of study are held in the month of October in each year. Students who have successfully passed the examinations in all the subjects prescribed for any of the first three divisions, and have fulfilled the before-mentioned requirements attached to Divisions I. and II. regarding practical work and ambulance certificates, obtain the distinction or title with diploma of "Associate of the University School of Mines of Otago," whilst the successful passing of the examinations in Divisions IV. and V., and compliance with the conditions regarding practical work attached to Division IV. entitles them to receive respectively certificates of "Mining and Land Surveyor" and of "Metallurgical Chemist and Assayer." The number of such diplomas and certificates granted up to the present session (1895) is as follows: fourteen diplomas of associateship in the mining division, twelve in the metallurgical division, and five in the geological division; twelve certificates in the surveying division, and twelve in the assaying division. So far as known, all the students who were successful in obtaining these diplomas and certificates have since gained satisfactory, and some really good, positions as mine-managers, geologists, mineralogists, lecturers in mining schools, assayers, &c.

The yearly attendance of students for the first eight years, *i.e.*, up to 1887, was rather poor, owing, no doubt, to the incomplete state of the school, the number never having risen above six; but since the latter year it has varied between sixteen and twenty-six, with good prospects of keeping above twenty in the future.

Regarding the teaching facilities and equipment of the school, they are ample for all the subjects included in its plan of instruction. Thus, in physics, chemistry, and biology the school shares the advantages of the large and well-equipped laboratories of the arts and science courses of the University; while for the special mining-school subjects, such as mining, mineralogy, petrography, geology, surveying, metallurgy, and assaying, there are provided collections of geological and mining models, plans, and maps, general and special collections of minerals, rocks and thin rock-sections, goniometers, microscopes, polariscopes, surveying and levelling instruments, and a machine for cutting and grinding thin sections of rocks for microscopic examination. A small museum, containing the geological and mining models, safety-lamps, plans, maps and sections, a collection of crystal models, and a number of different collections of mineral, rock, and metallurgical specimens, is daily open to students for inspection and study. The roomy metallurgical laboratory contains five smelting and five cupelling furnaces, seven good balances, and all the appliances and apparatus required for assays and determinations. It is further in contemplation to provide the laboratory before long with the plant necessary for extracting gold by the important cyanide of potassium process from auriferous quartz, concentrates, and tailings. The plant will deal with samples of as much as a ton in weight, and the learning and working of the process on so large a scale should be of great advantage to students.

SCHOOL OF ENGINEERING AND TECHNICAL SCIENCE, CANTERBURY COLLEGE.

The School of Engineering and Technical Science occupies a wing of Canterbury College, comprising a lecture- and drawing-room capable of accommodating sixty students, an experimental research laboratory, boiler-house, specimen- and model-rooms, and offices.

The work of the school is divided into three sections:—

(*a.*) The education of students with a view to their becoming qualified engineers.

(*b.*) The imparting of technical instruction by means of evening lectures to mechanics and apprentices engaged at their trades during the day.

(*c.*) Experimental research as to the physical nature of the manufactured and natural products of the country.

(*a.*) *The Education of Engineers.*

Students who have matriculated are prepared by a four years' course of theoretical, technical, and practical work for taking the degree of Bachelor of Science in Engineering in the University of New Zealand.

The necessary lectures in mathematics, chemistry, and physics are given by the professors of these subjects at Canterbury College, the technical lectures and instruction in drawing and experimental work by the Professor of Engineering, and the practical work is obtained at the Government Workshops.

The examiners are appointed in England by the University Senate.

(*b.*) *The Technical School.*

Instruction is given in the Technical School in freehand mechanical drawing, descriptive geometry and setting-out work, mechanical drawing, applied mechanics, mechanics of machinery, the steam-engine, and strength of materials and structures, whilst special short courses of lectures are delivered to boiler-makers on the design and construction of steam-generators; to millwrights on tooth gearing; to mechanics, &c., on air-, gas-, and oil-engines, and refrigerating-machines.

The school possesses a large stock of drawing apparatus, valuable sectional and other models and diagrams, and this stock is being constantly augmented.

(*c.*) *The Research Laboratory.*

The plant of the research laboratory comprises: A 50-ton testing-machine of the most modern pattern, fitted with an automatic recorder. This machine is capable of receiving test-pieces up to 15ft. in length. A 2,000lb. cement-, wire-, and yarn-tester; a Thurston lubricating oil-tester; a cylinder oil-tester (a petroleum-tester); a fuel-tester; a pair of experimental engines, and boiler of 40-h.p., with measuring tanks, recording apparatus, &c., which can be worked as any type of engine under conditions of economy or the reverse.

With the aid of these appliances, the strength, elasticity, and physical features of metals, timbers, stones, cements, fibres, yarns, &c., are ascertained and recorded by automatically-drawn diagrams; the condition of fractured portions of structures and machines, and the strength of joists, pillars, girders, and trusses are experimentally obtained; the lubricating value of oils is found, whilst the calorific values and the best arrangement for combustion of different descriptions of coals and other fuels are discovered.

CANTERBURY AGRICULTURAL COLLEGE.

Director: J. Bayne, M.A. (Glasg.), B.Sc. in Agri. (Edin.).

Lecturers: Agriculture—The Director. Chemistry, general and agricultural—G. Gray, F.C.S. Natural Science—P. Marshall, M.A., B.Sc. (N.Z.). Land-surveying and Levelling, ————. Applied Mathematics and Bookkeeping—C. E. Adams, B.Sc. (N.Z.), Associate of the Institute of Actuaries. Veterinary Science—J. R. Charlton, M.R.C.V.S. (Lond.), F.E.V.N.S. (Edin.).

The Agricultural College is situated near the township and railway-station of Lincoln, in one of the most beautiful and healthy districts of the Canterbury Plains, and is about fourteen miles by rail from the City of Christchurch.

The institution is supported by endowments of lands, students' fees, and profit of the farm, its object being to afford those intending to look to farming for a livelihood the opportunity of acquiring a thorough knowledge of the science and practice of agriculture.

The buildings are after the Elizabethan style of architecture, and can accommodate at least fifty students, each having a separate bedroom. They also include lecture-, theatre-, and class-rooms, studies, chemical and biological laboratories, library, dining-hall, hospital-room, all necessary offices, and quarters for the director and for the resident teaching-staff. The laboratories are designed on the most approved principles, and are provided with all the necessary appliances for the conduct of scientific work.

The library contains a good selection of books, chiefly agricultural and scientific, and the reading-room is supplied with the leading agricultural papers and magazines, illustrated weekly, and daily papers. Candidates for admission as resident students cannot be received if under sixteen years of age; those above twenty-one years of age require to obtain the approval of the Chairman of the Board of Governors, on a recommendation from the director of the school. Non-resident students may be received on approval of the Chairman of the Board of Governors, and are admitted to all the advantages of the institution except residence.

No examination is required prior to the admission of a student, but students who have passed the annual examination in chemistry, botany, geology, and mathematics in any of the university colleges, or who may pass in those subjects a preliminary examination conducted at the Agricultural College, may gain the diploma of the college in three terms.

The course of instruction extends over two years, and embraces agriculture and its allied sciences, instruction being imparted by means of lectures in the laboratories, on the farm, and in the garden and orchard. The year is divided into two terms: the first, which is the commencement of the academic year, begins about the 16th January, and ends about the 23rd June; the second begins about the 23rd July, and ends about the 12th December.

The charge for instruction, board, residence, and laundering is £40 per annum, that for non-resident students being £5 per annum.

The Boards of Education of the colony provide a number of scholarships for competition in any of the public schools of the colony, and the holders of these are entitled to be admitted free as resident students to the Agricultural College.

Lectures and practical farm-work are carried on as follows: On one day the first year's students receive lectures, and the second year's students work on the farm; on the following day the second year's students receive lectures, and the first year's students work on the farm; thus each student's time is equally divided between lectures and practical farm-work.

Instruction is given in the following subjects: Scientific work, comprising agriculture, theoretical chemistry, practical chemistry, agricultural chemistry, theoretical agricultural botany, practical agricultural botany, economic entomology, physiography; land-surveying, levelling, plotting, mechanical drawing, applied mechanics, book-keeping; veterinary science. Practical farm-work, comprising milking, horse-grooming, ditching, hedging, ploughing, shearing, harvesting, threshing, practical knowledge of live-stock, culture of fruit and vegetables, apiculture, dairy-work, carpentry, farriery, &c. To obtain the diploma of the College students must pass an examination in each of these subjects.

Examinations are held as follows: (*a*) once a week in one subject; (*b*) in June, upon the work of the first term; (*c*) in December, upon the work of the whole year. A diploma is granted by the College to students who, at the end of their second year, obtain the required number of marks at the annual examination, this diploma being the highest distinction conferred by the College.

Reports are issued twice a year to parents and guardians, containing the fullest information as to the conduct and progress of the student.

The farm on which students receive their practical instruction is 660 acres in extent, and has been so selected as to comprise soils of various qualities, from rich swamp to comparatively light and thin soil overlying shingle. The farming is carried on as nearly as possible on economic principles, and in illustration of the teaching of the lecture-room. The farm-buildings and stock-yards have been planned to be as complete as possible, whilst including only such accommodation as it is thought will be ordinarily required in the colony. The farm plant contains all the most modern implements for the cultivation of the soil; also the most modern machines for the harvesting, securing, and marketing of crops.

Students are required to take part in the regular daily work of the farm, so as to acquire a practical knowledge of every kind of farm-work, the use of implements and machinery, the management of stock, milking, and the making of cheese and butter.

Work in the garden and orchard is also required, in the growing of vegetables, in the treatment of fruit-trees, &c.

Field experiments are carried out, especially in testing the value of different methods of cultivation and rotations, the effects of different artificial manures on various crops, the suitability and comparative worth of new varieties of cereals, fodder-plants, and roots that promise to be of use to the farmer, and in such other directions as may appear desirable and practical.

Work is also carried on in the chemical laboratory. In illustrating the teachings of the lecture theatre, agricultural specimens are as frequently as possible used. Students, during their term of residence, proceed from the testing of simple substances to the quantitative analysis of manures, soils, foods, and farm and dairy produce generally. Biological laboratory work includes: Use of the microscope and the preparation of microscopic objects; examination of rust, smut, and other injurious fungi; germination of seeds under various conditions; examination of the minute anatomy of plants; cells and cell contents: diffusion of fluids in plants; rate of growth, fertilisation, maturation of seeds, &c.; organic impurities in water, &c.; the minute anatomy of injurious insects; field investigations in the life-history of injurious insects and fungi; adulteration of seeds.

In land-surveying and levelling, field-work will be undertaken at suitable times for practice in the use of instruments, in measuring land, harvest and other piece-work, and in taking levels for drainage purposes, the results of field-work being plotted, and plans drawn.

The carpenter's and blacksmith's shops are furnished with the necessary appliances. Students take their turn at work with the carpenter and blacksmith, so that they obtain practical instruction in both rough carpentry and farriery, as far as these are carried out on the farm. Students are required, under supervision of the lecturer, to personally examine animals as to soundness, and to point out the various seats of disease and nature of diseased parts. They are also required to make *post-mortem* examinations, and to make themselves proficient in the various methods of securing animals for different kinds of operations.

Finally, the Agricultural College is one of the best institutions of the kind in the Australasian Colonies, and from the above it will be seen that it would be difficult to find any other where young men could acquire a more thorough knowledge of the principles of the science of agriculture, together with a better practical training in the art.

SECTION II.

AGRICULTURE.

By M. Murphy, F.L.S.

It is generally admitted that there is no part of the British dominions where agriculture, in its widest sense, can be carried on with so much certainty and with such good results as in New Zealand. The range of latitude, extending as it does from 34° to 47° south, secures for the colony a diversity of climate which renders it suitable for all the products of subtropical and temperate zones, while an insular position protects it from the continuous and parching droughts, which periodically inflict such terrible losses on the agriculturist and pastoralist of Australia and South America.

Again, the climate, although somewhat variable, never reaches the extremes of heat or cold. So genial, indeed, is it that most animals and plants, when first introduced to the colony, assume a vigour unknown to them before.

North Island.

All the best forage-plants and grasses thrive most admirably, continuing to grow throughout the year with little intermission. Stock of every sort thrive and fatten rapidly on the pastures, coming to maturity at an early age without the aid of roots or condimental foods. All cereals flourish equally well, more especially Indian corn, which produces from fifty to eighty bushels per acre.

So full is the soil of plant-food that several continuous crops of potatoes and cereals may be taken with little apparent exhaustion. Wheat, oats, and barley thrive where the soil is not too rich; otherwise they produce enormous crops of straw, without a corresponding yield of corn. The tobacco-plant thrives well, as do also hops and sorghum, broom-corn, peanut, hemp, ramee or rheea (China grass), together with a large variety of economic plants, the growth of which will one day afford employment for a large population. In addition to these, oranges, lemons, limes, olives, and vines, with all the British, Chinese, and Japanese fruits, flourish abundantly, requiring but ordinary care. Potatoes are largely grown, and yield heavy crops.

Much of the country along the south-west and west coast is being rapidly taken up, and the primeval forest is fast disappearing before

the settler's axe. For the most part, the soil is fertile, and the growth of grass and clover is extremely rapid and vigorous when sown on the surface after the felled timber has been destroyed by fire.

To the British husbandman it will seem almost incredible that the best pasture-grasses grow and thrive as they do with no other preparation than the ashes resulting from the burnt timber, with no ploughing and no previous loosening of the soil—this, of course, being impossible amongst the forest of stumps—and yet, in less than a year from the date of scattering the seed, this same land will fatten from five to six sheep per acre.

So rapidly are these fertile forest-lands being cleared and converted into pastures that the demand for stock (principally dairy) has greatly increased, and this demand must continue for a series of years before it is fully met.

Before the introduction of the factory system stock were so unsaleable, especially in the North Island, that little or no attention was paid to this branch of rural economy, and the supply fell to the lowest ebb. The demand which has now set in is chiefly due to the settlement of the bush-lands with small selectors and the development of the dairy industry.

Those who in the past have watched the progress of New Zealand, especially of the North Island, have always maintained that as soon as the Maori difficulties should be ended, and other impediments to settlement overcome, the prosperity of the country would advance at a very rapid rate. The time has now come, and all that is required to enhance and expedite the coming prosperity is wise legislation with respect to settlement, so that the unoccupied lands may be taken up by a thrifty class of small settlers.

There are millions of acres yet unoccupied, a great portion of which is of good quality, and only waiting the hand of man to make it carry, with very little cost, large herds of dairy stock, with flocks of long-wool and crossbred sheep. The west coast of the island is essentially a cattle-country. Considerable areas in the midland districts are adapted to long-wool sheep, as is also the country along the east coast. Much of the country may be described as being good sheep-land, a large portion of which is quite capable of carrying two sheep to the acre, and some of it as many as three or four.

South Island.

If the North Island has a splendid inheritance in her forests, the South Island can boast of her magnificent plain-lands, rolling downs, and vast mountain ranges, all of which, to a greater or less degree, have already been made to contribute to the wealth of the colony.

The central portion of the South Island presented to the first-comers a vast plain, covered only with waving tussock-grass, offering little or no obstruction to the plough.

Travelling south, the country assumes a different character: easy, undulating downs, well watered, here and there interspersed with fertile plains, the greater portion admirably adapted for agriculture, and all of it suited for pastoral purposes.

The climate of the South Island is not so warm in summer nor so mild in winter as that experienced in the North Island. However, as has already been stated, there are no extremes of heat or cold. Much more might be said in praise of this portion of the colony. It is deemed necessary to say so much in order that readers may better comprehend the comparative ease with which every kind of farming is carried on in New Zealand as compared with other countries less favourably situated.

Progress of Agriculture.

Reviewing the past season from a farmer's standpoint, the colony must be congratulated on the advance in prices which has taken place for most kinds of farm produce since the issue of the last volume. The area under wheat and oats exceeded that of the previous year. There has, however been a slight falling-off in the area under barley. In the early part of the season, and almost up to the time of harvesting, the prospects throughout the colony, particularly in the great wheat-growing districts of Canterbury, were brighter than they had been for some years previously. Farmers were congratulating themselves on phenomenal yields of all kinds of cereals which they were preparing to reap, when on the 19th January a fierce north-west gale set in, blowing with such concentrated fury, sweeping over the fast-ripening cornfields, threshing and smashing the heads and straw, to such an extent that some oat crops, which promised sixty to eighty bushels, were hardly worth cutting. It is estimated that the Canterbury district lost about an average of five bushels per acre of wheat, equal to 847,475 bushels, valued at present prices, viz., 3s. per bushel, or £127,121. The loss of oats was still more serious, being estimated at ten bushels per acre. This crop was nearer ripe than the wheat, and it consequently suffered more severely. The loss is set down at 128,055 bushels, valued at 1s. 6d. per bushel, or £9,604. These losses are for the Canterbury district only, and were caused, as above stated, by furious north-west gales interspersed with phenomenal hailstorms. The turnip crops suffered to some extent, the hail leaving the leaves riddled with jagged holes. Happily, the hailstorm swept over a comparatively narrow belt of country. The disastrous results have been demonstrated by the threshing-machine yields, which were far below that anticipated. In other parts of the country matters have not been so bad, although Otago and Southland suffered considerably from excessive rains during the harvesting season.

Having said so much, it is pleasing to note that there is a bright side to the question, which is to be found in the general advance in prices for cereals of all kinds, compensating in some measure for the losses referred to.

There has also been a material rise in wool, which has given an impetus to the sheep industry.

The following statement shows the extent to which each kind of crop was sown in the several provincial districts:—

TABLE SHOWING THE NUMBER OF ACRES UNDER WHEAT, OATS, AND BARLEY, ETC., IN THE SEVERAL PROVINCIAL DISTRICTS.

Wheat.

				Bushels.		Bushels.
Canterbury	169,495 acres	..	average per acre,	27	yield,	4,576,365
Otago	50,130 "	..	"	32	"	1,604,160
Auckland	8,923 "	..	"	26	"	231,998
Wellington	7,400 "	..	"	26	"	192,400
Marlborough	5,179 "	..	"	27	"	139,833
Nelson	1,826 "	..	"	20	"	36,520
Taranaki	1,793 "	..	"	24	"	43,032
Hawke's Bay	695 "	..	"	28	"	19,460
	245,441			28		6,843,768

Oats.

Otago	195,525 acres	..	average per acre,	37	yield,	7,234,425
Canterbury	128,055 "	..	"	30	"	3,841,650
Wellington	18,627 "	..	"	30	"	558,810
Hawke's Bay	6,830 "	..	"	30	"	204,900
Auckland	6,253 "	..	"	24	"	150,072
Taranaki	3,924 "	..	"	30	"	117,720
Marlborough	3,588 "	..	"	31	"	111,228
Nelson	1,945 "	..	"	23	"	44,735
Westland	41 "	..	"	..	"	..
	364,788			34		12,263,540

Barley.

Otago	13,283 acres	..	average per acre,	33	yield,	438,339
Canterbury	12,198 "	..	"	28	"	341,544
Marlborough	3,853 "	..	"	23	"	88,619
Nelson	1,990 "	..	"	26	"	51,740
Hawke's Bay	1,842 "	..	"	26	"	47,892
Auckland	945 "	..	"	30	"	28,350
Wellington	763 "	..	"	30	"	22,890
Taranaki	482 "	..	"	34	"	16,388
Westland	2 "	..	"	..	"	..
	35,358			29		1,035,762

Rye.

Otago	2,276 acres	..	average per acre,	27	yield,	61,452
Canterbury	512 "	..	"	12	"	6,144
Auckland	148 "	..	"	10	"	1,480
Wellington	147 "	..	"	13	"	1,911
Hawke's Bay	138 "	..	"	30	"	4,140
Marlborough	81 "	..	"	26	"	2,106
Nelson	39 "	..	"	17	"	663
Taranaki	25 "	..	"	21	"	525
	3,366			23		78,421

Maize.

Auckland	11,734 acres.
Hawke's Bay ..	1,105 "
Taranaki	557 "
Wellington	420 "
Canterbury	16 "
Marlborough	1 "
Nelson	1 "
Total	13,834 acres.

Vetches or Tares.

Canterbury	285 acres.
Marlborough	59 "
Otago	51 "
Wellington	50 "
Taranaki	10 "
Auckland	11 "
Nelson	9 "
Hawke's Bay	5 "
Total	480 acres.

Peas.

Canterbury	4,844 acres.
Marlborough	1,269 "
Wellington	561 "
Nelson	215 "
Otago	149 "
Auckland	105 "
Hawke's Bay	37 "
Taranaki	20 "
Total	7,200 acres.

Beans.

Canterbury	3,784 acres.
Taranaki	312 "
Wellington	289 "
Marlborough	176 "
Hawke's Bay	171 "
Nelson	74 "
Auckland	46 "
Otago	11 "
Total	4,863 acres.

Linseed.

Otago	1,920 acres.
Canterbury	127 "
Wellington	21 "
Auckland	14 "
Taranaki	13 "
Nelson	6 "
Hawke's Bay	3 "
Total	2,104 acres.

Hops.

Nelson	328 acres.
Wellington	8 "
Hawke's Bay	8 "
Auckland	5 "
Marlborough	3 "
Total	352 acres.

Other crops .. .. 2,812 acres.

TOTAL AREA UNDER CLOVERS AND COCKSFOOT GRASS.

District.	White Clover.				Red Clover or Cow-grass.				Cocksfoot.			
	Acres.				Acres.				Acres.			
	For Feeding down with Stock.	For Hay.	For Ensilage.	For Seed.	For Feeding down with Stock.	For Hay.	For Ensilage.	For Seed.	For Feeding down with Stock.	For Hay.	For Ensilage.	For Seed.
Auckland ..	456	26	4	..	1,006	335	..	36	2,175	340	131	2,603
Hawke's Bay	114	50	..	..	143	2	..	..	2,515	18	..	415
Taranaki ..	..	15	..	..	5	18	26	..	1,874	13	..	3,418
Wellington	50	6	..	15	197	248	..	..	914	19	301	3,244
Nelson ..	9	22	..	90	902	144	10	..	149	2	..	64
Westland ..	2	1	..	..	73	51	..	..	..	5	..	1
Marlborough	24	2	..	18	80	15	2	34	178	7	..	28
Canterbury	58	116	..	1,095	1,924	957	12	5,914	1,780	240	..	2,914
Otago ..	47	15	35	192	744	154	..	487	5,483	83	20	520
Totals ..	760	253	39	1,410	5,075	1,924	50	6,471	15,068	727	452	13,207

TOTAL AREA UNDER RYE-GRASS AND OTHER KINDS.

District.	Rye-grass. Acres. For Feeding down with Stock.	For Hay.	For Ensilage.	For Seed.	Other Kinds.* Acres. For Feeding down with Stock.	For Hay.	For Ensilage.	For Seed.
Auckland ..	6,456	955	328	7,728	3,294	2,144	24	37
Hawke's Bay ..	15,362	1,130	22	2,294	945	67	...	100
Taranaki ..	413	117	..	528	250	2	..	..
Wellington ..	2,455	185	24	1,249	142	36	..	277
Nelson	233	27	..	27	117	..	..	..
Westland ..	401	8	..	..	..	..	..	..
Marlborough ..	3,197	270	5	260	270	34	8	65
Canterbury ..	4,809	970	224	13,424	1,927	69	..	116
Otago	36,223	1,187	52	20,968	1,896	117	9	1,798
Total ..	69,549	4,849	655	46,378	8,841	2,469	41	2,393

* Notwithstanding land in mixed grasses, 4,074,312 acres.

TABLE SHOWING THE TOTAL NUMBER OF ACRES IN GRASS.

District.	Area after having been Ploughed.	Surface-sown on Land not previously Ploughed.	In Native Grass.
	Acres.	Acres.	Acres.
Canterbury	1,478,481	353,067	3,838,970
Otago	1,393,810	348,110	7,600,633
Auckland	533,669	866,862	524,116
Wellington	300,280	1,778,754	513,362
Hawke's Bay	243,515	974,373	200,253
Taranaki	137,485	360,938	9,070
Nelson	78,238	160,010	870,281
Marlborough	73,374	151,038	1,426,748
Westland	16,071	33,495	53,826
Totals	4,254,923	5,030,247	15,037,259

Total area of grass-land .. .. .. 24,322,429 acres.

TOTAL ACREAGE UNDER GREEN CROPS.

District.	Potatoes.	Turnips.	Mangolds	Rape.	Beet.	Carrots.	Other like Crops
	Acres.	Acres.	Acres.	Acres.	Acrs.	Acres.	Acres.
Auckland ..	7,304	28,851	466	5,509	115	535	2,690
Hawke's Bay ..	1,536	10,936	1,929	4,985	218	42	931
Taranaki ..	1,801	4,511	333	1,358	16	453	131
Wellington ..	4,401	22,771	833	5,056	13	59	206
Nelson	634	7,636	68	2,146	3	19	1
Westland ..	299	283	2	30	..	25	3
Marlborough ..	713	2,941	339	626	..	13	79
Canterbury ..	8,368	143,400	2,677	26,396	46	483	393
Otago	6,941	170,229	1,653	7,934	60	106	160
Totals ..	31,997	391,558	8,300	54,040	471	1,735	4,594

TOTAL ACREAGE IN PLANTATIONS, GARDENS, AND ORCHARDS, ETC.

District.	Native Bush.	Artificial Plantations.	Private Garden.	Market Garden.	Ploughed Land not to be Cropped this Season.	Orchards
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Auckland ..	781,546	8,843	2 428	713	5,386	9,339
Hawke's Bay ..	271,254	3,917	1 041	258	1,823	756
Taranaki ..	262,176	1,410	810	86	312	564
Wellington ..	819,232	2,651	2,123	682	4,942	2,987
Nelson ..	127,526	1,134	220	66	733	654
Westland ..	372,463	1	93	20	83	166
Marlborough ..	182,496	979	272	50	643	441
Canterbury ..	29,511	20,129	3,839	737	10,725	2,673
Otago	354,746	4,182	3,843	468	33,442	1,782
Totals ..	3,200,950	43,246	14,669	3,080	58,039	19,362

TOTAL NUMBER OF SHEEP, APRIL, 1895.

District.	Number.
Canterbury	4,716,558
Otago	4,365,661
Wellington	3,633,514
Hawke's Bay	3,240,491
Auckland	1,744,566
Marlborough	848,533
Nelson	872,590
Taranaki	376,075
Westland	28,616
Total	19,826,604

NOTE.—The above number is believed to have fallen to 18,982,080 in April, 1896, but these figures are only approximately correct.

TABLE SHOWING THE TOTAL NUMBER OF CATTLE.

District.	Shorthorn Bulls.	Cows and Heifers for Dairy purposes.	Cows and Heifers for Breeding purposes.
Auckland	1,678	10,503	5,972
Taranaki	910	626	323
Hawke's Bay ..	673	1,627	12,177
Wellington ..	1,083	2,002	4,202
Marlborough ..	62	400	148
Nelson	94	401	129
Westland	23	169	89
Canterbury ..	508	4,026	725
Otago	765	1,922	721
Totals ..	5,796	21,676	24,486

Other Pure Breeds.

		Total.
Pure Hereford Bulls	628	6,241
" " Cows and Heifers ..	5,613	
" Polled Angus Bulls	838	6,272
" " Cows and Heifers	5,434	
" Ayrshire Bulls	1,203	5,548
" " Cows and Heifers ..	4,345	
" Jersey Bulls	833	3,833
" " Cows, and Heifers ..	3,000	
" Other Breeds, Bulls	149	773
" " Cows and Heifers	624	
Crosses—Bulls	8,671	419,811
" Cows and Heifers	411,140	
Total		442,478

Steers, etc.

	Steers over Two Years old.	Steers or Heifers under Two Years not otherwise enumerated.
Pure Shorthorn	22,538 ..	30,754
" Hereford	2,039 ..	1,929
" Polled Angus	2,223 ..	2,360
" Ayrshire	531 ..	1,945
" Jersey	121 ..	683
Other pure breeds	264 ..	296
Crossbred steers	131,243 ..	348,466
Totals	158,959 ..	386,433

Total number of cattle 1,039,828

TABLE SHOWING THE NUMBER OF HORSES.

Light Horses.

District.	Stallions.	Mares with Foal or in Foal.	Mares over Two Years.	Geldings over Two Years.	Colts and Fillies under Two Years.
Auckland.. ..	696	4,106	13,202	19,722	6,730
Wellington ..	323	2,283	10,965	13,816	3,721
Otago	334	1,497	9,014	10,442	3,020
Canterbury ..	307	1,208	8,515	10,298	2,620
Hawke's Bay ..	255	791	3,374	4,713	1,345
Taranaki	131	907	4,190	4,119	1,626
Marlborough ..	42	170	1,080	1,119	255
Nelson	76	310	1,789	1,876	423
Westland ..	43	88	492	629	192
Totals ..	2,207	11,360	52,621	66,734	19,932

Draught Horses.

District.	Stallions.	Mares with Foal or in Foal.	Draught Mares over Two Years.	Colts and Fillies.	Geldings.
Otago ..	213	1,764	11,037	2,795	12,660
Canterbury ..	143	1,010	8,830	1,647	9,861
Auckland ..	349	1,076	4,445	1,567	6,310
Wellington ..	131	562	3,026	679	3,780
Nelson ..	44	187	1,337	200	1,574
Taranaki ..	57	352	1,049	356	1,630
Hawke's Bay..	80	251	957	241	1,735
Marlborough ..	24	123	890	108	984
Westland ..	7	27	161	32	273
Totals ..	1,048	5,352	31,732	7,625	38,807

Total number of light horses	152,854
" draught horses	84,564
Total	237,418

TABLE SHOWING THE NUMBER OF PIGS.

District.	Boars for Stud purposes.	Sows for Breeding only.	Store Pigs.
Canterbury ..	782	6,385	52,004
Otago	816	4,377	32,453
Auckland ..	2,072	7,723	44,555
Taranaki ..	414	2,623	15,150
Wellington ..	938	6,044	37,223
Hawke's Bay ..	217	1,442	8,091
Nelson ..	284	1,179	8,904
Marlborough ..	140	438	3,569
Westland ..	56	274	1,625
Totals ..	5,719	30,485	203,574

Total pigs .. .. 239,778.

A reference to the statistical tables on pages 211 to 214 reveals the fact that the depression referred to in the last issue of the Year-book is rapidly passing away, and it is hoped that with judicious legislation and better farming the improvement which has set in will be permanent. It will, however, be advisable for

farmers not to lag behind in adopting measures for maintaining the fertility of their land while abstracting from it the maximum of crops at a minimum of cost; this can only be done by following a judicious rotation. How it is possible to do this was ably pointed out by Mr. Bayne, Director of Lincoln Agricultural College, in his lecture delivered under the auspices of the Canterbury Agricultural and Pastoral Association, at their winter show (held in May last). He pointed out that in a new country the necessity for rotations did not exist, because the soil was full of plant-food; but, as crop after crop was taken off the land, it was only a matter of time when they could no longer be grown at a profit; it is then that the farmer will be driven to consider the best rotation to follow. This is the position of the New Zealand farmer at the present time: his land is rapidly becoming unable, from long cropping, without any attempt at rotation, to produce, as it used to, crops that will pay for cutting and harvesting. It is the opinion of some of the best and most practical farmers in the colony that, with wheat at its present price, it will not pay to use artificial manures with cereals, and that nothing is required beyond a proper rotation and the thorough working of the soil. How necessary it is that farmers should know something of the theory of rotation is illustrated by the following quotation, taken from Mr. Bayne's lecture above referred to. When speaking of the sources of nitrogen for the use of wheat, beans, clover, &c., he said:—

"1. In having a leguminous crop like beans preceding a wheat crop there is a saving of manure. The wheat-crop does require a nitrogenous manure, but it gets that nitrogenous manure almost wholly in the residue or roots of leguminous crops like beans.

"2. It is quite unnecessary to supply a nitrogenous manure to the bean, or any leguminous crop, as they are almost wholly supplied by nitrogen from the atmosphere.

"3. Not only is it unnecessary, but nitrogenous manures have, after frequent dressings on leguminous crops, actually a hurtful effect, and in the case of pastures containing clover, a nitrogenous manure, though the clover contains a large amount of nitrogen, actually causes the clover to disappear. We need hardly remind ourselves that the nitrogenous manures, for which we pay expensively, are nitrate of soda and sulphate of ammonia. Organic manures, as dried blood, have not so bad an effect, probably owing to the fact that they give up their nitrogen slowly.

"4. The bean-crop is a striking illustration of the truth that the composition of any crop is no true guide as to the manure which should be applied. Were it so, then a nitrogenous manure would be the one for beans, which we have just found would be unwise to apply.

"5. The bean-crop is, or ought to be, like turnips, a cleaning and a fallowing crop, and, where possible, good cultivation before sowing, and horse-hoeing frequently between the drills as long as it can be employed without detriment to the crop, will result in an

increase of bacteria in the soil, which bacteria, as we pointed out, will insure an abundance of tubercules on the roots of the bean-plant, and consequently a large supply of manure, in the form of soluble nitrogenous compounds, can be secured for the succeeding crop of wheat.

"6. Now, as to the other compounds taken up by the bean-crop. The chief are potash, lime, and phosphoric acid. These are made use of wholly by the bean-crop, so that as far as these compounds are concerned the bean-crop is exhaustive and and not restorative, as the small amount of these compounds left in the roots of the bean is immaterial; and if the wheat crop is to be supplied with these ingredients it must get them from the soil, and not from the bean-crop. In soils, however, well suited to the growth of beans these ingredients are very seldom wanting, and, if they are, a small dressing of superphosphate to supply the phosphoric acid, and lime, will be sufficient, and kainit, a sulphate of potash, would supply the potash.

"7. One thing more about these last-mentioned ingredients—potash and lime—is that the bean-crop seems to have an adaptability either to develop on the one or on the other. In a soil where lime abounds, lime preponderates in the composition of the bean-crop, notably in the straw; and where potash abounds, potash correspondingly predominates in the composition of the crop."

The farming of the future will have for its main object the increased production of wool and mutton as well as dairy produce, pork, poultry, fruit, fibre plants, and seeds, &c.; and although grain-growing must be continued to a greater or less extent, it has already ceased to hold the leading position which it formerly occupied.

This kind of farming involves, in the South Island at least, the growth over large areas of turnips, grass, and fodder-crops, thus bringing greater fertility to the soil, and, consequently, advancing prosperity to the farming community.

Cereals.

The Canterbury Plains, the great wheat-growing area of the South Island, extend 150 miles north and south, running inland from the sea for forty miles, the whole forming an area of about 3,000,000 acres. A great portion of this vast plain is admirably adapted for the production of wheat, barley, and oats of the best quality, the growing of which has been carried on extensively, more especially since the introduction of the reaper-and-binder. The area under wheat in Canterbury in 1895–96 was 169,495 acres, with an estimated yield of 4,576,365 bushels. The land is for the most part free from stones or impediments of any kind. Single-furrow ploughs are now rarely seen, double- and three-furrow ploughs being in general use. Three horses, occasionally four, with a man or a boy, can turn over three acres per day on the plains, at a cost of 5s. or 6s. per acre. A stroke of the disc or other harrow, followed by the seed-drill and light harrows, completes the operation of sowing.

Seed-sowing commences in May, and can be continued as weather permits through the winter, and in the heavy swamp-land (drained) on into September and even October. From 1¼ to 1½ and 2 bushels of seed per acre are usually sown, the quantity increasing as the season advances.

Good results are in general obtained by feeding-off the early-sown grain with sheep, followed by the harrows and roller. The average yield on the better class of soil in favourable seasons is from 40 to 60 bushels per acre of dressed grain. The general average of the whole colony is usually 25 to 26 bushels, but this varies with the season. This discrepancy is accounted for by the fact that so much wheat is grown on the lighter soils.

Several varieties of wheat are grown, but Hunter's White, Pearl, and Velvet Chaff are the favourite kinds for winter sowing. Red and White Tuscan are usually sown in spring.

In view of the periodical attacks of rust, advantage will doubtless be taken of the experience gained by carefully-conducted experiments which have been carried on during the past few years in Victoria, New South Wales, and Queensland, where it is claimed that certain wheats have been found impervious to the attacks of rust, thus minimising the losses caused by that fungus. Several varieties are named as rust-resisting, and farmers should combine and procure these varieties in order to give them a trial. It was reported that early sowing was the best preventive measure, for the reason that the older the leaves are the tougher they become. This theory, however, has not been borne out by actual observation in the colony, as early-sown crops are also sometimes attacked, if not so severely.

Dressing the seed with genuine bluestone is found to be a certain specific for smut in its various forms.

The Oamaru (North Otago) district is famous for the quality of its wheat, grown on limestone soil.

In Otago and Southland wheat is grown, but not extensively. But these districts excel in the production of oats, which is their principal cereal crop, the respective acreages last season being 50,130 acres of wheat, yielding 1,604,160 bushels, and 195,525 acres of oats, yielding 7,234,425 bushels.

The usual yield of oats in Otago and Southland is from 40 to 80 bushels per acre, the cost of production being about the same as wheat—viz., £2 per acre when grown out of grass-land, and £1 10s. from stubble. The varieties of oats most in favour are Winter Dun, Canadian, Sparrowbill, Tartary, and Danish.

Malting barley, of very superior quality, is grown in Nelson and Marlborough, where the soil and climate appear to be peculiarly adapted to its culture.

The low prices of wheat and other cereals raise the question whether matters might not be improved by the exercise of a little more care in preparing the grain for market. Nothing but the plumpest corn should be shipped, for there can be little doubt but that a far better use can be found for the inferior grain in

feeding pigs, poultry, dairy cattle, and sheep with it on the farm, thereby increasing the fertility of the soil. Carefully-dressed wheat would yield at least 65lb. to the bushel, and oats, similarly treated, would go 50lb. to the bushel measure, insuring a ready sale at the highest rate. The late Mr. Mechi, of agricultural fame in England, used to argue that, when wheat and other grain fell below a certain figure, then it paid better to drive it to market on four legs rather than on four wheels. This limit has long since been reached in New Zealand, and therefore the sooner Mr. Mechi's advice is put into more extended practice the better it will be for all concerned. Mr. Gray, Lecturer on Agricultural Chemistry at Lincoln College, in his lecture at the Christchurch winter show on "Farm Foods and Feeding," showed very clearly how necessary it was that farmers should have a knowledge of the chemistry of feeding stuffs, such as peas, beans, and the cereals and malt combings, otherwise they might very easily feed them to their animals in such a manner as to produce the minimum of results instead of the maximum.

Root-crops.

Potatoes: Potatoes are largely grown throughout New Zealand. On suitable soils very heavy crops are raised, it being no uncommon thing to dig from 8 to 10 tons per acre, although the general average is much lower, for the reason that unsuitable land is frequently devoted to this crop. The bulk of the crop is planted without manure, but, where used, bonedust, superphosphate, blood-manure, or animal guano (which may be procured of first quality from the local manure manufactories), from 1cwt. to 2cwt. per acre, is applied with good results. The potato is, however, an expensive crop to grow, costing from £5 to £6 per acre. It is, however, a very profitable one, where the crop is good and prices are not below 25s. to 30s. per ton. The land is usually broken out of grass, skim-ploughed in autumn, ploughed deeply in spring, and thoroughly tilled; or they may be grown in drills opened and closed with a double-furrow plough. The seed—15cwt. per acre—is then ploughed in under every third furrow, the after-culture consisting of harrowing just as the crop is appearing over ground (by this means myriads of seedling weeds are destroyed); drill-grubbing, hoeing, horse-hoeing, and earthing-up being the subsequent operations. Heavy crops of wheat, oats, barley, beans, or peas can always be relied upon after potatoes, season permitting.

Turnips: The turnip-crop has now become one of the most important in the colony. The area under this crop for 1896, according to the agricultural statistics, was 391,558 acres. On virgin soil turnips can always be relied upon as a certain crop without any manure, even on a single furrow and a couple of strokes of the harrow. But, as most of the virgin soil in Canterbury has already been cropped, turnips cannot now be successfully grown there without the aid of manure. In the nature of things, from a climatic point of view, farm-yard manure cannot be procured in suf-

ficient quantity; artificial manures are therefore largely used, from 1cwt. to 1½cwt. of superphosphate of lime per acre being now applied with the best results, securing ample crops of sound roots, from 15 to 30 tons per acre. The seed is sometimes sown in drills on the flat, the manure being dropped in front of the seed by the same machine, from ½lb. to 1lb. per acre of seed being used; when sown broadcast a smaller quantity will suffice. Sometimes the manure is deposited in a liquid state, by machines manufactured for the purpose. This system invariably secures a rapid and vigorous braird, forcing the young plant into the rough leaf, after which it is secure from the attack of the turnip-beetle, the first enemy of the young plant's growth. So soon as the turnip-plants reach the third or fourth leaf, they are thinned by a scuffler, made for the purpose, which is drawn across the drills, bunching the turnips and thoroughly loosening the soil. The drill-grubber and scuffler are used as required till the leaves meet. This kind of culture produces capital crops at a minimum of cost. Large areas are sown broadcast, and, if found too thick, the harrows are run through them; in any case, a stroke of the harrows is a great help in promoting the growth of the plant. The varieties used are Devonshire Grey for early and very late sowing; Purple- and Green-top Aberdeen are the most generally grown. Swede turnips, from their proneness to the attack of the turnip aphis, are not so much grown, though they produce enormous crops in Otago and Southland, where the climate is more suitable. The turnip-crop is generally fed off by sheep intended for freezing. It is estimated that an acre of good turnips, with a little hay or oat-chaff, will fatten from eight to fourteen sheep. Turnip-sowing commences in November, and may be continued till the end of December. Stubble turnips may be sown in March, but this can only be considered as a catch-crop. It, however, often proves of great value, supplying an abundance of green food for ewes with early lambs. Turnip-land is usually sown with oats or barley, and sometimes spring wheat.

Rape is largely grown as sheep-feed, and may be sown either in early spring or immediately after harvest, the stubble being skim-ploughed or broken up with the new spring-tined cultivator. This crop is invaluable in the early spring, and may be fed off in time for oats or barley.

Mangolds and Carrots are largely grown in some districts. They cost more money per acre than turnips to produce, as they must be hand-hoed; nor are they so suitable a crop for cleaning the land. Turnip-sowing does not commence till November or December, affording ample time for the destruction of seedling weeds; this important opportunity is largely lost in the culture of the mangold, which is usually sown in October. Mangolds are, however, an invaluable crop on a stock-farm, as they do not reach their primest condition until the turnip-supply is exhausted, usually in August. From 30 to 60 tons per acre is not an uncommon yield of these roots, often without the aid of manure.

Carrots are also a valuable crop, especially for horses; on sandy loams the yield reaches 15 to 20 tons per acre. Carrots impart a pleasant flavour to butter.

SEEDS.

Clover: Saving clover for seed has now become an established and a lucrative industry, adding materially to the farmers' income. Clover is sown with a spring crop, usually of corn, lightly grazed in the following autumn, and then reserved for a crop of hay, which, according to the season, yields from 2 to 3 tons per acre when cut in November or early in December. Some farmers prefer feeding off with sheep in preference to mowing for hay. The after-growth is then allowed to flower and seed, which it does very freely. Thousands of humble-bees may be seen in the clover-fields during the months of January, February, and March. The seed ripens in March, and is then cut and dried, and threshed out by machines known as clover-shellers. From 200lb. to 300lb. of seed per acre is considered a good crop, and sells readily at 4d. to 6d. per pound. Thus an acre of clover may yield in hay and seed quite £10 or £11. It must, however, be stated that, while a good crop of clover-seed is a most lucrative one, it is nevertheless a most precarious one. Owing to the lateness of the season of ripening, it sometimes happens that the fertilisation is imperfect, resulting in a majority of barren heads. This has given rise to a controversy as to whether the proper bee has been introduced. The point was referred to Miss Ormerod, the English entomologist, who settled the question in the affirmative.

White and alsike clover are now grown in considerable quantities. White clover yields enormously, 300lb. of alsike seed has been secured this season per acre and sold for 6d. per pound. These clovers are not dependent on the action of the humble-bee for their fertilisation. They mature earlier, and are more easily threshed and cleaned than cow-grass or red clover.

Grass-seed Saving: All the most valuable British grasses flourish throughout New Zealand. Cocksfoot has been a staple product of Banks Peninsula for many years, the soil for the most part consisting of decomposed volcanic rocks and vegetable mould. The seed is of the finest description, frequently weighing 20lb. to the bushel (12lb. being a standard bushel). Cocksfoot thrives on a very wide range of soil, from the richest to the poorest, preferring, of course, the former. It may be found on the dry stony plains of the interior, green and healthy, when the surrounding herbage, introduced or indigenous, has yielded to the heat of the summer sun. Large quantities of this seed are grown in the North Island as well.

Growing ryegrass for seed is also an important industry. The seed is usually secured by stripping; sometimes the grass is cut and tied, and afterwards threshed by machinery. The average yield is from 15 to 20 bushels per acre, weighing from 25lb. to 32lb. per

bushel, 20lb. being the standard weight. A common practice is to graze the land till midsummer; to take the stock off for a few weeks, and then to run the stripper over the ground. By this primitive method 10 bushels per acre are sometimes secured, being of the finest quality. Ryegrass seed is usually in good demand, and sells readily at from 3s. to 4s. per bushel.

Meadow fescue, one of the most valuable of all the grasses for permanent pasture on good land, is grown both in the North and South Islands, but as yet not very largely. Growing grass-seed of all the finer kinds should be an important industry in New Zealand, but as yet very little attention is paid to it.

Small Seeds: New Zealand, from the nature of her soil and climate, offers a fine field for growing all kinds of farm and garden seeds. This circumstance has already attracted the attention of some of the larger seed-merchants of Great Britain, whose agents occasionally visit the colony with a view to inducing farmers and others to grow certain kinds of seeds. The industry is peculiarly adapted to small holdings, and well suited to young persons, the work being light and of an interesting character. Ready sale can be found for carefully-grown and carefully-cleaned garden seeds.

Pulse: Peas and beans are largely grown for pig-feeding and export; they form an excellent preparation for wheat, as illustrated by Mr. Bayne in his lecture already quoted. An extensive trade in peas of a certain description is done in the manufacturing towns of Great Britain; and efforts are now being made to secure a share of this trade for the colony by producing peas suitable for splitting for human food. The business is likely to prove a most remunerative one. Thirty bushels of peas are considered a fair crop, while 40 to 70 bushels of beans are often secured.

Cape Barley and Winter Oats: The demand for early-spring feed has resulted in the growing of these plants for forage. Their extreme hardiness renders them well adapted for autumn sowing. If sown in March they are ready for feeding-off in May; they may be fed off again in July, and on till the beginning of October, when, if allowed to run to seed, they will produce 40 to 60 bushels per acre, or they may be ploughed-in for turnips.

Tares are also grown, but not so largely as they deserve to be, especially for dairy stock. Mixed with oats, barley, or rye, they are excellent milk-producers; and when grown luxuriantly they destroy all kinds of weeds, and leave the land in fine condition for a spring corn-crop.

Lucerne: This permanent fodder-plant thrives admirably in most parts of New Zealand, yielding three to five cuttings in the year; and, if properly attended to, it will continue to yield liberal cuttings for seven or eight years. This is a most excellent crop for the small or large farmer, furnishing, as it does, an abundant supply of succulent fodder, in deeply-cultivated rich soils, during the drier months of midsummer, as well as in the early spring. No farm should be without a well-cultivated plot of this plant.

European Flax.

Some few years ago an attempt was made to establish this industry in Canterbury, but wheat was then realising a fair price, farmers did not take kindly to the new idea, and the project failed. Good, however, resulted from the attempt, for it was proved beyond doubt that the flax-plant would grow most luxuriantly, producing plenty of fibre (and seed when allowed to ripen). It was found that 5cwt. to 7cwt. of fibre could be produced per acre, and from 15 to 30 bushels of seed, which under proper management should find a lucrative sale for use in the manufacture of boiled and raw linseed oil, or for export. It must, however, be remembered that when fibre of the finest quality is the main object, the plant must be pulled green regardless of the seed. A sample of European flax, grown and dressed in New Zealand, and sent Home, realised 10s. per 14lb., or £80 per ton. A considerably less price than this would pay. The fact that the manufacture of oil has already been attempted, with but indifferent success, is no argument against a fresh effort being made; but it is an argument in favour of the production of the seed at a lower rate than was the case at the time referred to. The present is an opportune time to ventilate this question. This industry is a poor man's one, and might be made to pay if the small settlers would take it up; and Government may possibly see its way to offer a bonus for the production of fibre suitable for export, the residue to be worked up into binder-twine, commercial twines, and ropes.

Sugar-beet.

This question is now attracting a large amount of attention at the present time in the Waikato district. The farmers of Victoria, and of New South Wales, are being induced to give the growing of beets a fair trial. A perusal of the following is sufficiently conclusive to convince the most sceptical that there is money in the industry, viz.: "The output at Spreckel's Mill (California), from the 3rd September to 14th September last, was 10,945 tons of sugar from 77,145 tons of roots, for which the farmers received 16s. per ton; and as their crops averaged 11 tons per acre, they received £8 16s.; 11 tons of beets average 1½ tons of sugar."

The following valuable contribution to this subject is from the pen of Mr. George Gray, Lecturer on Chemistry at Lincoln Agricultural College (Canterbury):—

At intervals during the last twenty-five years the question as to the growth of sugar-beet, and the manufacture of beet-root sugar in New Zealand, has been brought into notice, engaged the attention of our legislators and others for a time, and afterwards lost sight of again. The subject has recently been revived in the public press, and the following paper has been written in order to bring into notice a few facts connected with this most important industry, showing what has hitherto been done in the colony, more particularly with regard to the capability of soil and climate to produce sugar-beets of paying quality.

In 1870 the Government Committee on Colonial Industries recommended that a bonus of £10 per ton upon the first hundred tons of sugar and £5 per ton for every fifty tons of syrup produced from beet root grown in the colony should be given. Afterwards negotiations were opened up with German merchants through Mr. F. A. Krull (German Consul in New Zealand), and beet seed was obtained from Germany for

trial in the colony. In 1871 the Joint Committee on Colonial Industries recommended that a bonus of £2,000 be offered for the first 250 tons of beetroot sugar, grown and produced in the colony. In 1877 the Beetroot Sugar Committee advised that excise duty should not be levied on beetroot sugar produced in New Zealand for ten years from August, 1877. In 1878 a bonus of £5,000 was offered for 500 tons of sugar produced in the North Island, and £5,000 for 500 tons produced in the South Island. In 1884 the Beetroot Sugar Act was passed, which provides that a bonus of ½d. per pound be paid for the first 1,000 tons of sugar produced from beetroot or sorghum grown in the colony. It also provides that excise duty, if any, shall always be ½d. per pound less than the import duty, and that if, during fifteen years from the passing of the Act, the import duty be reduced or removed, a bonus shall be paid as an equivalent.

So much has hitherto been done for the fostering of this industry in New Zealand, but without producing any effect.

Two main points have to be taken into account in dealing with this question. First, as to whether the soils and climate of New Zealand are suited for the growth of beetroot sufficiently rich in sugar to be remunerative to the manufacturers. And next the commercial aspect, whether the expensive nature of the plant required, the high price of labour, and the cost of production would allow beet sugar to compete with cane sugar, at present placed on the market at a very low price.

The latter question cannot be settled until the first is disposed of. If it can be shown that roots containing the requisite amount of sugar can be grown in sufficient quantity, and if the project is possible from a commercial point of view, doubtless it would not be long before capital would be forthcoming to enable the industry to be started.

For the purpose of arriving at some definite conclusion regarding the percentage of sugar in New-Zealand-grown beets, all the available analyses have been collected, and the results shown in the appended table.

In some respects the results are perplexing, due in many cases to overgrowth, or to insufficient care having been taken in the cultivation of the roots. The culture of sugar-beet requires probably more skill than any other farm crop. In order to insure the maximum amount of sugar it is necessary to have good loamy soil with free drainage, cultivated to at least a depth of 12in., and the plants at such distances as to insure the growth of small compact roots weighing from 1lb. to 2¾lb. Such roots have been proved to contain a higher percentage of sugar than large roots. This is well shown in the following table. Thus, if we divide the results into two groups—those obtained with roots under 2¾lb. and those above this weight—we find that in the results obtained at the Colonial Laboratory, Wellington, with roots less than 2¾lb. weight, the average percentage of sugar was 7·8, maximum 10·9, and minimum 5·2. Roots above this weight average 5·2, maximum 7·6, and minimum 2·1. None of these results indicate beet of sufficient richness to pay for extraction.

Nearly all the roots examined by Mr. Pond were under 2¾lb. weight, and gave an average of 11·0 per cent. of sugar, maximum 15 per cent., and minimum 6·4 per cent.; the latter being probably due to second growths, which tend to lower considerably the percentage of sugar. The few roots above weight gave an average of 6·4 per cent. The earlier School of Agriculture reports were obtained by Mr. F. Barkas with roots grown on the farm, all of which were not above 2¾lb. The average per cent. of sugar obtained was 9·17, maximum 11·7, and minimum 3·2. Later results obtained with the same kind of beet (White Imperial) grown at the school, by the writer, one root only being slightly overweight, gave an average of 7·32, maximum 8·20, minimum 5·78.

The beets represented at the end of the table from the Ellesmere district were obtained from seed imported by Mr. Werner from his brother in Saxony, who is a large grower of sugar-beet. The results are higher and more even, notwithstanding that many of the roots were large, although planted only 10in. and 12in. apart. The small roots gave an average of 11·58 per cent. of sugar, maximum 12·27, minimum 9·79, and the large ones an average of 10·18, maximum 11·38, and minimum 8·78.

The mean percentage of all the results recorded is 8·62.

PERCENTAGE OF SUGAR IN NEW-ZEALAND-GROWN BEETS.

I.—*Results obtained in the Colonial Laboratory, Wellington.*

Variety of Beet.	Weight.	Locality where Grown.	Date of Collection.	Sugar per cent.	Remarks.
	Lb.		1873.		
White Silesian ...	3½	Wellington ...	February	2·1	Good shape, immature.
Vilmorin	1¼	,, ...	,,	6·7	Ditto.
White Imperial .	3¼	,, ...	,,	2·2	,,
,, ...	6	,, ...	,,	2·1	,,
White Silesian .	4	,, ...	June .	5·5	Good taper shape.
Vilmorin	3½	,, .	,, ...	6·5	Bad shape, forked.
,, ...	5	,, ...	,, ...	5·1	,,
,, ...	4	,, ...	,, ...	4·2	,,
White Imperial .	2¾	,, ...	,, ...	5·2	Good taper shape, ripe.
,, ...	2½	,, ...	,, ...	8·1	Ditto.
White Silesian ...	2	N. Plymouth	Early in August	8·7	Well shaped, ripe.
,, ...	4	,,	Ditto ...	7·4	,,
,, ...	6 to 8	Napier ..	,, ..	6·0	,,
,, ...	9 to 16	,, ...	,, ...	Highest 3·1	Generally well shaped, nearly ripe.
			...		
Silesian	4	,, ..	...	4·9	
,, ...	4¼	,, ...	...	5·8	
.. ..	2½	,, ...	...	8·4	
,, ...	3¼	,, ...	...	7·6	
	1½	Christchurch	...	8·2	
	5 to 8	Hawera ...	...	Highest 5·1	
	Lb. oz. 1 2	Auckland .	...	8·4	
	1 10	,, ...	...	8·0	
	2 10	,, ...	...	6·9	
	4 4	Hautapu ...	...	6·7	
	...	Hamilton ...	...	7·6	
	...	,, .	...	6·4	
	..	,, ...	...	5·1	
	...	,, ...	...	7·8	
	...	,, ...	...	6·2	
	..	,, ...	...	5·3	
White Silesian ...	...	,, ...	..	7·4	Good shaped.
	...	,, ...	...	9·1	,,
	Lb.				
	about 2	Waverley ..	.	7·1	
	,, 4	,, ..	...	6·2	
	,, 6	,, ...	..	5·1	
	½ to 1	Oroua Downs	...	10·9	
	1½ to 2¼	,,	...	7·1	
	2½ & over	...	...	7·3	
	1	Novendale ...	...	8·2	Excellent shape.
	2	,, ..	...	7·5	,,
	3	,, ...	...	7·5	,,

II.—*Results obtained by Mr. J. A. Pond, Auckland.*

Variety of Beet.	Weight.	Locality where Grown.	Date of Collection.	Sugar per cent.	Remarks.
	Lb. oz.				
	2 2	Hamilton ...	...	10·95	
	1 2	,, ...	...	10·17	
	0 12	,, ..	..	13·55	
	2 2	,, ...	...	14·25	
	...	,,	...	14·25	
	2 7	,, .	...	11·40	
	2 0	,, ..	..	14·25	
	5 5	Huntly	...	4·31	
	0 12	,, .	..	7·58	
	0 9	,, ...	...	11·87	
	1 12	Raglan ...	...	8·14	Badly formed.
Wanzlebenel Imperial	0 13	Puturimu ..	March 10	13·57	
Deppe's Silesian Imperial	1 1	,, ...	,	15·00	
Red-top Imperial ...	0 12	,, ...	,,		
	1 10	Cambridge ...	April 2...	15·00	
	1 1	,, ...	,,	13·57	
	1 15	,, ...	,,		
	Lb.				
Wanzlebenel Imperial	1¼	Alexandra	Aug. 10	12·66	
Deppe's Silesian Imperial	1½	,, ...	,, ...	11·40	
Red-top Imperial ...	2¾	,, ...	,, ...	9·82	
	Lb. oz.				
Wanzlebenel Imperial	1 1	Tamahere ...	Feb. 8 ...	8·90	
Deppe's Silesian Imperial	1 6	,, ...	,, ...	7·50	
Red-top Imperial ...	0 9	,, ...	,, ...	8·38	
Wanzlebenel Imperial	1 2	,, ...	Mar. 26	10·55	
Deppe's Silesian Imperial	2 0	,, ...	,, ...	11·87	
Red-top Imperial ...	1 7	,, ...	,, ...	11·17	
Wanzlebenel Imperial Deppe's Silesian Imperial ... Red-top Imperial	1 3	,, ...	May 7 ...	12·79	
Wanzlebenel Imperial	2 9	,, ...	Aug. 29	7·42	
Deppe's Silesian Imperial	2 4	,, ...	,, ...	6·47	
Red-top Imperial ...	3 5	,, ...	,, ..	8·65	

III.—*Results obtained at School of Agriculture, Lincoln.*

Variety of Beet.	Weight.	Locality where Grown.	Date of Collection.	Sugar per cent.	Remarks.
	Lb.				
White Imperial ...	1¾	Lincoln ...	March 10	8·82	
,, ..	2¼	,, ...	,, 22	3·20	Largest roots.
,, ...	1⅜	,, ...	,, 28	10·80	Small roots.
,, ...	2½	,, ...	April 6	8·48	Large and round.
,, ...	1¼	,, ..	,, 6	10·40	Small and close growing.
,, ...	1¾	,, ...	,, 27	8·96	
,, ...	2	,, ...	May 11	11·72	Leaves fading.
,, ...	2	,, ..	,, 22	9·84	
,, ...	1¾	,, ..	,, 29	9·08	Getting pithy at core.
,, ...	1¼	,, ...	June 13	10·44	Few round roots left.
,, ...	12½	,, ...	,, 22	8·28	Fair-shaped root.
	Lb. oz.				
,, ...	1 8¾	,, ...	,, 22	7·12	,,
,, ..	2 2½	,, ...	,, 22	5·78	,,
,, ...	2 13½	,, ...	,, 22	8·09	,,
	6 4	Blenheim ...	June ...	8·59	Large overgrown root.
	5 13	,, ...	,, ...	9·14	Ditto.
	3 10	,, ..	,, ...	7·84	,,
	3 5	,, ...	,, ..	6·86	
	2 6	,, ...	,, ...	10·51	
	4 8	Irwell ..	,, ...	10·10	Thick short root.
	3 7	,, ..	,, ...	9·79	Ugly forked root.
	4 0	,, ...	,, ..	9·15	Forked root.
	4 1	Doyleston ..	,, ...	10·53	Long tapering root.
	4 9	,, ..	,, ...	10·76	Thick forked.
	5 12	,, ...	,, ...	8·78	Tapering, fair shape.
	2 5	Leeston ...	,, ...	13·40	Short thick root.
	3 11	,, ...	,, ...	11·38	Long, tapering.
	1 12	,, ...	,, ..	10·88	Thick, slightly forked.
	1 10	Lincoln	,, ...	9·79	Small forked.
	2 10	,, ...	,, ...	12·24	Long, tapering.
	3 14	,, ..	,, ..	11·01	Long, fairly tapering.

It is stated by the authorities of the United States Department of Agriculture that 13 per cent. of sugar indicates a kind of beet that can be successfully manufactured. Some other authorities give lower numbers, but, considering the difficulties that have to be contended with in the manufacture, it is better to adopt the higher standard.

Although generally the results given are sufficiently low to cast a doubt as to the successful culture of the sugar-beet in New Zealand, yet they cannot be considered as conclusive evidence against it. From Mr. Pond's results it would appear that the Waikato district is suitable for the growth of sugar-beet, and the results obtained with roots grown in the Ellesmere district are promising. The yield of roots per acre in the latter district averaged 31 tons. Mr. Werner states that he has since seen roots grown in this district of much better quality than those analysed, and thinks that better results would be obtained by sowing the seed early

in October, instead of late in that month and early in November, as was the case with the roots examined. Mr. Werner has been to considerable trouble in trying to induce farmers in the district to grow sugar-beets for trial, but has not met with much success.

The same difficulty was experienced by the United States Department of Agriculture in 1891, as shown by the fact that out of 5,000 samples of seed distributed only 1,605, or less than one-third the number of samples, were returned for analysis, and with these in but few cases were the directions issued complied with. The department has consequently decided to reduce the quantity of seed distributed, and to establish an experimental sugar-beet station, where practical illustrations of the very best methods of sugar-beet culture, and the selection of "mothers" for the production of a high grade of seed would be given.

Something of this kind might be done by our own Department of Agriculture. Agricultural experiments to be of any value must be carried out with rigid adherence to known facts, and must be, moreover, systematic. A well-laid plan of operations must be first drawn up, and the conditions insisted on. Farmers, however, can seldom afford the time from their ordinary work necessary to the successful carrying-out of experiments.

Cost of Working a Farm in New Zealand.

When comparing the cost of working a farm in England as compared with one of the same size in the colony, several points have to be taken into account, such as the climate, the soil, labour, and machinery. In the colonies, wages are dearer than in Britain; as a set-off against this, the colony can claim that there are more fine working days in the year, that the fields are much larger, that the latest improvements in machinery have been introduced, that the soil is more easily worked, and the genial nature of the climate is such that it is unnecessary to house stock during the winter months, at least in the North Island, and so the cost of attendance is saved; secondly, farming operations may be carried on continuously throughout the ploughing and sowing season; thirdly, the paddocks are so large, and usually so level, that the double- and treble-furrow plough may be worked by one man or youth with three horses.

The hay-crop is simply cut one day, raked into windrows next, and in a couple more it is ready for stacking.

Wheat is cut and tied by machinery, and stooked, requiring no capping. It is frequently threshed out of the stook in favourable seasons, thereby saving the cost of stacking and thatching; but this method is not recommended except in hot, dry seasons.

The manure bill, which is such a heavy item of annual expenditure with the British farmer, presses as yet very lightly on the farmers of the colony. It is, however, a notable fact, that the use of fertilisers is becoming more general; 1cwt. to 1½cwt. of superphosphates per acre is used with the turnip and other root-crops, for the purpose of forcing the young plant into the rough leaf, when it will be out of our danger—the turnip-fly. It will thus be seen how many advantages the colonial farmer has over the farmer of the old country.

STOCK.

Sheep: New Zealand has proved itself to be admirably adapted for the breeding of all classes of sheep, from the fine-combing merino to the strongest type of Lincoln. The merino occupies and thrives on the wild lands of the colony, from the snow-line to the border of the plains, as well as on the drier portions of the plains. The merino ewe furnishes the foundation for all the crossbred varieties. On the rich moist soils the Lincoln and Romney Marsh flourish, while the finer English and Border Leicesters occupy the drier lands.

Crossbred Sheep: Those bred from merino ewes and long-wool rams are the most suitable for the frozen-meat trade, and are known as "freezers."

The dapper little Southdowns flourish wherever crossbreds thrive. Their more ponderous cousins, the Shropshire and Hampshire Downs, have their admirers, especially the Shropshire, which are largely used for crossing, with a view to producing early-maturing lambs. English Leicesters are also much sought after for this purpose.

Since the development of the frozen-meat trade, sheep-farming in the colony has undergone a radical change. At one time wool was the chief consideration, the surplus stock finding its way into the boiling-down vat, the tallow and pelts being the only products of value. Things have marvellously altered since 1882, the inaugural year of the frozen-meat trade. Farming has assumed a new phase, sheep-raising for mutton and wool being the most profitable branch. Small and large flocks of pure and crossbred sheep are now kept on all farms which are suitable for them, the object being the production of early lambs for freezing. The percentage of increase all over the colony is very high, especially in the paddocks, where 100 to 125 per cent. is not uncommon in favourable seasons, while on the hill and unimproved country it varies from 45 to 80 per cent.

Shearing commences in September, and is continued till January. The usual price per hundred is from 15s. to 17s. 6d. Shearing-machines are gradually coming into use, but some sheep-farmers prefer hand shearing.

The average clips for the various breeds of sheep are approximately as follow: Merino from 4lb. to 7lb.; quarter-breds, about 6½lb.; half-breds, 7½lb.; three-quarter-breds, 8½lb.; Leicester, 10½lb.; Lincoln, 11lb. Of course, very much larger clips are obtained from special flocks, as much as 25lb. to 30lb. per sheep; but the above figures represent general averages.

The staple of New Zealand wool, especially the long-wool and crossbred, is remarkable for its freedom from breaks and other imperfections incidental to countries subject to long droughts and scarcity of feed.

The most profitable sheep for New Zealand is that which combines

the best fleece and the most suitable carcase for freezing purposes, together with early maturity. This is the class of sheep which some sheep-breeders have set themselves to produce. Whether such an animal, having fixity of type, can be evolved, remains to be proved; so much depends on the feed, situation, and soil. One or two breeders claim that the new breed, Corriedale, embraces these desired qualities and are possessed of a fixity of type.

The capability of New Zealand for producing mutton has not yet reached its limit. When the frozen-meat trade was first seriously considered, an assertion to the effect that the colony could soon find 1,000,000 sheep per annum for freezing without impairing the breeding-flocks was treated as highly chimerical by sheep-breeders of long experience. It is found, however, on reference to the statistical returns that during the year 1895, 1,632,590 sheep and 735,254 lambs were exported from New Zealand. There are twenty-one freezing-works in the colony, with a full freezing-capacity of 3,665,000 per annum. While congratulating the colony on the rapid development of the frozen-meat trade, it must be borne in mind that in Argentina strenuous efforts are being made to secure a share of the frozen-mutton trade carried on by New Zealand with Great Britain; Australia is also making strong efforts to share the trade with New Zealand. It must be admitted that with cheaper land, and a closer proximity to the markets of the world, Argentina will necessarily be a very formidable rival with Australasia. The sheep-farmers are becoming alive to the value of Down sheep for crossing purposes: they pay as much as six guineas per head for Shropshire ewes and twenty-five to fifty guineas for Lincoln rams. We must not shut our eyes to these facts: our only safeguard is in the production of nothing but first quality mutton and lambs.

The determination of Australian flock-masters to cut into the frozen-meat trade has given rise to a demand for our long-wool sheep of superior quality; New Zealand breeders have consequently been enabled to extend their operations beyond their own borders; and although the trade may not prove a very extensive or lasting one, it will give encouragement to those who have spent time and money in building up their now famous stud-flocks.

A New Zealand Sheepbreeders Association has published the first volume of the "New Zealand Flock-book." Three hundred flocks have been entered. The work should prove of great value to breeders of pure stock.

There will always be a certain demand for sires bred in New Zealand, for the reason that this climate is probably better suited than the Australian for producing robust and hardy animals. It may be well here to correct an erroneous impression which has been fostered in some quarters, and appears to have gained credence in the minds of some sheepowners in Australia. It is to the effect that "merino ewes cannot lamb to Lincoln rams;" and as one fact is worth one hundred theories, the following will serve to set the matter at rest: Mr. H. Overton, Highfield, Kirwee, some time ago

purchased a draft of strong merino ewes and put some of his stud Lincoln rams to them; the result was that from 210 ewes he tailed 234 prime lambs, which averaged him £1 per head; thus showing the fallacy of the idea above referred to.

HORSE-BREEDING.

The climate of New Zealand is admirably adapted for the breeding and rearing of horses of all kinds. Indeed, it would be difficult to find better Clydesdale horses than those bred on the limestone soils of Oamaru and elsewhere. Some of the best blue blood of this breed has from time to time been imported from Scotland, with the result that the breed is now well established in the colony.

The light-horse stock of the colony has risen into note through the production of animals which have rendered themselves famous on the Australian turf. The demand for horses suitable for remounts for the cavalry service in India is a continuous one, affording a ready market for the proper stamp of animal. Shipments have from time to time been made to that country with considerable success, and this trade is likely to increase. The importation, however, of a few really good sires for the production of carriage-horses, hunters, and hacks would be a national benefit.

CATTLE.

The colony possesses all the best strains of blood, and this is evidenced by the superior class of cattle to be met with throughout the settled districts, especially in the show yards. There are two Herd-books published by the Canterbury Agricultural and Pastoral Association—one for shorthorns, the second for breeds other than shorthorns; the third volume, of other breeds, contains 1,200 new entries. New Zealand is free from any of the diseases so disastrous to horned stock in other countries. It is said that Iceland is the only other spot on the earth which enjoys the same immunity. With a view to maintaining this enviable position, the Government have prohibited vessels carrying live-stock from infected colonies touching at any of the ports of New Zealand except under certain conditions. This action is deemed necessary, owing to the prevalence of pleuro-pneumonia in the other colonies.

DAIRY STOCK.

The breeding of first-class dairy stock offers a field for profitable investment. Milking-cattle now command a comparatively high price, and will continue to do so for an indefinite period, owing to the fact that stock were allowed to run low for want of a market, which has sprung up with the building of factories. The rearing of well-bred heifer calves will repay all the time and trouble bestowed thereon. They must, however, be of exceptionally good quality and fine milking strains. It may be well to remark that separated milk, although relieved of its butter-fat, loses little of its feeding

value; the addition of a little linseed meal will restore the fatty constituents, which, however, are not the most valuable for feeding purposes. Ground oats, wheat, or barley added to the linseed mucilage will render calves fit for the butcher in a comparatively short time. An acre or so of European flax should be grown upon every farm where stock-rearing is carried on. The fattening of calves for export has not yet been attempted in the colony, and yet there is a very large and lucrative market for veal calves in London, ranging from £4 to £6 and £7 per head. The matter is under consideration, and may result in something practical being done, which would considerably augment the profits of the dairy. Much has yet to be done in the way of improving the dairy stock of the colony. The yield of milk from fairly good milking-cattle is approximately 500gal. per annum, although 700gal. are frequently obtained from selected herds. The average quantity of milk obtained will no doubt be increased as more attention is paid to breeding and proper feeding. The general management and feeding of dairy stock is a question demanding immediate attention. Kind treatment is essential to success; clean pastures, clear running water, and grasses of the best quality are all factors, fully recognised wherever dairying is successfully carried out.

The average yield of butter from milk passed through the separator is 1lb. for every 2½gal. of milk of 10½lb.; so that the average cow produces annually 200lb. of butter, or 500lb. of cheese, which, estimated at 4½d. per pound, will be worth about as much as the butter.

From £5 to £8 per head can now be readily obtained for young milking-stock. A few years ago they were hardly saleable at all. To the British farmer this may not appear a satisfactory value; but, when it is considered that hardly any housing or hand-feeding is required, the price leaves a very good return.

The Dairy Industry.

Speaking on dairy matters at the winter show recently held in Christchurch, Mr. McEwan (the Chief Dairy Instructor), said the days of very high prices had probably passed for ever; that dairymen need not expect much more than £2 to £2 5s. per hundredweight for cheese, and £5 for butter, which was getting to a very close margin, and the question was how to make the trade pay at these prices, We have to face keen competition. Canada, the United States, Denmark, Australia, and the Argentine, are all competing against us. Notwithstanding this, there is still money in the British market to pay for the best products, hence the necessity for sending only the very best article. Mr. McEwan said it might be argued that the prices quoted above could not be made to pay. To this he put one pertinent question, viz.: Could they tell him what it cost to produce a gallon of milk. If they did not know, how could they tell what price they could sell at? He stated that one of the best private dairymen in Canada had indicated he could produce a pound

of butter for 1½d. This is a nut for New Zealand dairy-farmers to crack.

For this industry the Danish Government maintains a splendid laboratory and staff of professors, chiefly for the study of ferment in butter and milk; and almost all the milk sold is pasteurised. Everything in connection with the industry is conducted on scientific lines. The Danish dairy cattle have to be housed during the six or seven winter months. This fact gives New Zealand an immense advantage over her rival, which will, however, avail little if we continue to ignore the teaching of science. In the North Island, along the west coast, factories have sprung up in all directions. This will be the great dairying district of the colony, the humidity of its climate rendering it better adapted to this industry than any other. The luxuriance of the pastures has to be seen to be appreciated. Large tracts of bush-lands are being thrown open for small settlements, and are eagerly taken up for the most part by thrifty hard-working men. Land is procurable either by purchase, or on lease in perpetuity, on the easiest terms. Homes are being built up in all directions, dairy farming being the staple business of the occupants. The very nature of the industry renders it peculiarly well suited to small selectors.

It is hardly necessary to point out that all butter and cheese intended for export will have to be factory made, for the reasons that no other will command the highest price, and that so much more can be made of the milk by the use of the separator. One illustration will serve for our purpose. Experience has demonstrated to a certainty that 26½lb. (or 2½gal.) of fairly good milk will produce 1lb. of butter, which averages 2d. per pound more than ordinary farmers' butter; whereas it usually takes 33lb. (or 3gal.) of milk, treated in the old-fashioned manner of setting in pans, to produce the same quantity of butter: which means exactly 50 per cent. more returns from the milk treated on the factory method.

The factory system is now well established, and with judicious supervision and care in grading, handling, and packing of butter for export, the industry should flourish and lucrative employment be secured to thousands of persons.

A great impetus will probably be given to the dairy industry by the introduction of an automatic milking-machine, the invention of Mr. Reuben Withell, of Brookside, Canterbury. This machine has had many tests, the most recent being one held by the Agricultural Society of New South Wales, and has been favourably reported on.

PIGS.

These useful adjuncts to the dairy should hold a very important position on almost all arable farms. The favourite breed in New Zealand is the improved Berkshire. The large and small breeds of White Yorkshire are also to be met with, but are not so generally approved of as the black pigs. The rearing and fattening of pigs is a profitable investment if carried out properly and on economic lines.

They require no better attention than a good grass paddock, with a liberal supply of roots, and a little unthreshed pea-haulm for a few weeks before killing, with plenty of water, and shelter from the sun during the warmest summer months.

Raising Young Stock.

Young stock and pigs may be raised and fattened on separated milk, quite (or nearly) as well as on whole milk. It is only necessary to supply the fat removed by the separator. This can be cheaply done by the addition of a little linseed gruel or mucilage, made by steeping or boiling the seeds, whole or crushed, of European flax, the addition of which supplies the elements removed in the butter-fat. Every farmer ought to grow a patch of this useful plant—say, one acre, which should produce from 15 to 20 bushels of seed. The straw, if worked up, will supply all the twine and ropes required on the farm, or may be used for thatching purposes.

The Fruit Industry.

From the North Cape to the Bluff Hill, in the extreme south of the South Island, the climate and soil are, for the most part, eminently adapted for the growth of a large variety of fruits. Generally speaking, pears, plums, quinces, apricots, figs, walnuts, cherries, gooseberries, currants, strawberries, and raspberries grow luxuriantly, producing abundant crops of fruit. In the Auckland District, oranges, lemons, and limes flourish: many groves are now bearing, and afford light and pleasant employment to a large number of persons. This employment will go on increasing as the trees become older. The olive flourishes in the North Island, bearing heavy crops, and the manufacture of oil is gradually becoming an important industry.

Vine-growing is also carried on with tolerable success in many districts; tons of fruit grown under glass are sold in the Auckland markets annually. Signor Bragato, an Italian wine expert, who visited this colony last year, gave it as his opinion that there are numerous localities in both islands admirably suited for growing vines for the manufacture of wine and raisins.

Away in the far north the banana grows and ripens its fruit, but it is not thought that it will ever enter into successful competition with those imported at so cheap a rate from the Pacific Islands.

Extensive orchards of apples have existed in Auckland for more than half a century, producing abundance of fruit of excellent quality, yielding returns equal to £40 or £50 per acre in favourable seasons, provided the trees are kept free from pests. Orchard-planting is progressing rapidly, and must one day become a very important industry. Fruit-growing is expected to pay well in Central Otago, where the climate is admirably suited for all the fruits of the temperate zone, and to progress rapidly so soon as the district is tapped by railway.

The Fruit Conference recently held in Wellington must be

productive of good results. Some excellent papers were read by experts; the majority, if not all of them, will be published in due course by the Agricultural Department. As some of the most valuable apples thrive better in some districts than in others, persons about to plant should apply to the Government Pomologist for information as to the most suitable kinds to plant in their particular district. Much after-annoyance and loss might be avoided by attending to these hints.

The manufacture of cider is already assuming considerable dimensions.

The drying of fruit has been fostered by the Government, who sent an expert through some of the apple-growing districts, giving practical lessons in the art of artificial fruit-drying. Large quantities of apples are annually allowed to go to waste, which might with great advantage be converted into wholesome food. A great deal might also be done in bottling fruits, and the manufacture of fruit-wines, if only for home consumption.

The manufacture of jam is carried on with much success, but there is plenty of room for further development in this industry.

Exporting Apples.

This trade has not yet assumed any great dimensions. New Zealand orchardists might well take a lesson from their brethren in Tasmania, who have developed a large trade with the London market. Growers must, however, be reminded that it is folly to ship anything but the choicest varieties of dessert- and keeping-apples.

Before the planting of fruit-trees was commenced on a large scale, with a view to the export trade, little attention was paid to the varieties selected. The result is that many bearing trees have proved unsuitable to the new requirements, and are now being cut down and regrafted or replaced with more suitable kinds. According to latest advices, the following varieties of apple are said to be in good demand in the London market, always commanding a quick sale at good prices—Ribstone Pippin, Cox's Orange Pippin, Waltham Abbey, Sturmer Pippin, Scarlet Pearmain, Adam's Pearmain, and New York Pippin. The soil best adapted for growing apples is a strong loam with a clay subsoil; but they will thrive in almost any kind of soil, provided it is in good heart and that water does not stagnate in the subsoil.

Owing to the comparative mildness of the New Zealand climate, all kinds of fruit-trees are forced into bearing at an earlier period than in Great Britain.

Tree-planting.

With a view to encourage the planting of trees, the Government some three years ago introduced the popular American institution of Arbor Day. The 4th of August in each year is set apart for the purpose of the public planting of trees; although it must, with

regret, be noted that New Zealand settlers have not as yet entered into the spirit of the institution, as it was hoped they would. Millions of trees have been planted in this way in the United States. Our native forests are fast disappearing before the woodman's axe; it is only a question of time and supplies will have to be drawn from artificial forests, or from foreign sources. Deciduous trees, such as ash, elm, and beech, should be largely planted. A small quantity of ash grown in Canterbury has already come into use for coach-building, and has been pronounced by competent experts to be of excellent quality. Plantations of larch might advantageously be made on the southern slopes of the foot-hills skirting the Canterbury Plains and elsewhere. There can be no doubt that a demand will arise for large quantities of larch-poles for mining purposes and for scaffolding long before trees now planted would be fit for use. Trees of this description in the Old Country are fit for cutting in about twenty years from planting, and are then worth £20 per acre.

Artificial Manures.

This industry has now assumed important dimensions; it is incidental to the frozen-meat trade, resulting from the by-products in the shape of offal. The blood is manufactured into a manure of great value, containing from 11 to 12 per cent. of nitrogen—it is said to be the cheapest form of nitrogen in the market—the other refuse being made into what is commercially known as animal guano. Increasingly large quantities of these manures are being used each year. They are found to suit the soils of New Zealand admirably. Lime, although not an artificial manure, forms a most valuable dressing for some soils, especially in Southland, where it is used in considerable quantities with remarkably good results, especially in soils well stored with "humus;" in such its beneficial effects are apparent for several years. When lime is applied to turnip-land, it is advisable to sow a little manure guano (not Peruvian) or superphosphate with the seed. Land is limed at the rate of two tons per acre, at a cost of £2 4s. 4d. per acre, made up as follows: Lime, £1 6s.; railage, 12s. 10d.; cartage, 4s.; spreading, 1s. 6d. We are now referring to Edendale, Southland, where large quantities of lime are annually used. Lime should be carried by rail at the smallest possible rate, to facilitate its more extended use.

Prospects of Small Farmers.

Those who have watched the course of events in other countries, so far as they affect the agricultural interests of New Zealand, have come to the conclusion that New Zealand will have to pay greater attention to the quality of her agricultural exports than has been given to them in the past. Our farmers cannot hope to compete with such countries as Australia and South America, where land is so much cheaper, and where mutton and beef of good quality can be produced; for cheap meat these must command the markets of the world. Happily for New Zealand, our climate and pastures are such

that we can not only produce mutton equal to the finest English or Scotch, but we can produce more per acre than can be done in Australia. Our dairy produce should be second to none. Unfortunately, however, that care which is indispensable in the manufacture of butter has not been exercised, consequently our exports have not fetched such satisfactory prices as they might have if put on the market in the best manner and of the best quality. It is suicidal to neglect the conditions under which butter of first quality can be made. Second-class butter comes into competition with margarine and other compounds.

Owing to her humid climate and fertile soil, New Zealand is peculiarly well adapted for small holdings. Men of slender means can easily make homes for themselves and their families, always provided they know something of the work they undertake, and are, with their families, willing to work hard and live frugally for a few years. It is quite possible for a man with a few cows and pigs, together with poultry and bees, to make a good living, as markets for these products are now being opened up in England. And there is a good local market if the goods are properly prepared. There is also a continuous demand for the supply of coastal and ocean-going steamers. The facilities now given for obtaining money at reasonable rates offer great inducements to persons to settle upon the land. There are thousands of acres in the North Island adapted for farming, and much land there is being taken up. The advance in prices for farm produce which has taken place during the past year will, it may fairly be assumed, stimulate the settlement of the lands throughout the colony.

Conclusion.

A few of the salient points have now been enumerated which go to prove conclusively that, as a country for settlement, New Zealand is not surpassed by any British possession, being one where the industrious man with moderate means can live with much comfort. The land, it is true, is dearer in some districts than that which may be found in South America, South Africa, or Canada, but this difference in price is far outweighed by other considerations, such as superiority of climate, and security to life and property. Pit these advantages against against the insecurity of life and property in South America and South Africa, or the rigour of Canadian winters, and the balance will be immensely in favour of New Zealand. Another great advantage enjoyed by the agriculturist of New Zealand is that he is nowhere far from the sea-board, giving him the benefit of cheap water-carriage for his produce to the markets of the world.

The foregoing notes would hardly be complete without some reference to the prevalence of small birds. Amongst other birds, the English sparrow was introduced to New Zealand some four and twenty years ago. Many of the early settlers remember his first appearance, and the pleasurable feelings elicited by the sound of his

once familiar chirp, awakening reminiscences of the Old Land. New Zealand is singularly destitute of the feathered enemies of small birds, and, owing to this and the genial climate, the sparrow and other birds have long since become so numerous that drastic methods have to be adopted to preserve the balance of power. Large sums of money are paid annually by the Road Boards for the destruction of small birds. The want, however, of concerted action on the part of farmers at the time of poisoning is responsible for the undue increase of the pest. While treating small birds as pests, it must not, however, be forgotten that before their advent farmers suffered very heavy losses from the periodical attacks of caterpillars, which frequently devastated their barley and oat crops, and that the birds are the farmers' friends in this matter. It must also be remembered that the birds live for about nine months in the year on insects and seeds of weeds; so that if accounts could be squared they would not be such debtors after all. All that can now be done is to keep them in check.

THE DAIRY INDUSTRY, 1895–96.

By J. B. MacEwan.

Increased interest is being manifested in the question of dairying throughout the different districts, but, though energy and skill is being applied in the economical production of the raw material, this branch of the industry is not keeping pace with the improvements in quality of the cheese and butter manufactured at the factories.

The financial returns for the year have been fairly satisfactory, and are certainly an improvement on the previous season. The severe winter of 1895 made itself felt in nearly every part of the country by causing a diminished supply of milk for the factories; the drought experienced in some parts further decreased the supply; and, as a result of these unfavourable conditions, the export of butter is about 300 tons, and that of cheese about 400 tons, less than last year. Looking carefully over every district in the country where dairying is carried on, and, considering the manner in which dairy cows are wintered, this shrinkage in the output is not surprising. To expect cows to be profitable after being exposed to the severity of such a winter as that of 1895 on a limited amount of feed is utter folly. The first principles of economical and profitable handling of milch animals demand that they shall be comfortable, and supplied with an abundance of cheap, succulent, wholesome, nutritious feed. Not only have our dairymen experienced a loss of revenue by a diminished supply of milk, but many have sustained a direct loss by some of their cows dying in the early spring, death being caused by an impoverished condition. The question of providing food and shelter for the winter has been discussed at many meetings of dairymen in different parts of the country during the year, and the general objection offered is that it would be unprofitable. This objection is usually uttered by those who have never followed the practice, while many leading dairymen who have tried it are united in their verdict that it is the only thing that will pay.

The most important consideration, however, demanding the immediate attention of the large majority of dairymen is that of improving their herds, by dispensing with all animals that are unprofitable, and replacing them with others that by proper handling may leave a distinct margin of profit. Higher ruling prices than those obtained for dairy produce of fine quality during the

past year can hardly be expected, unless under special conditions; therefore it is of the utmost importance that every effort should be made to keep down the cost of production.

There has, indeed, already been a decided improvement in the uniform quality of the cheese and butter exported. The best factories are manufacturing a very fine article, and have been able to realise top prices on the British market. Reports have been received of butter selling at almost equal prices to Danish, and finest cheese on favourable lines with that of Canadian. This is encouraging, and should prove a strong incentive in the future.

Work of the Dairying Service.

Dairy Schools.

The inauguration of dairy schools was well received, upwards of two hundred students—composed of managers and assistants of cheese and butter factories—attending. One school in the South Island was established at Edendale for a month, and another for the North Island, at Stratford, for an equal time. The schools were divided into four departments—viz., butter-making, cheese-making, milk-testing, and separators, with an instructor in charge of each. Practical work was carried on daily in all. The students were divided into four groups, and were moved from one department to the other every two days. Daily lectures were given on "Business relations of the Managers to the Milk-suppliers," "Managers' Responsibilities," "Composition of Milk and Dairy Products," "Treatment of Milk for Cheese- and Butter-making," "Practice and Principles of Cheese- and Butter-making," "Paying for Milk according to Quality," "Dairy Bacteriology," "Pasteurising Milk and Cream," "Working Separators." "Dairy Machinery and Refrigeration," "Aëration and Care of Milk," "Grading and Inspection of Butter and Cheese." Students took an active part in the discussion after each lecture.

Experiments in Spring Cheese-making.

After the closing of the dairy schools some experiments in spring cheese-making were arranged for. Invitations were extended to managers of cheese-factories in every district to be present, and were generally accepted. The object of these experiments was to secure data as to the best practices in making cheese at this time of the year. Spring cheese-making presents greater difficulties than at any other time of the year, and the best judgment and skill are required to turn out a satisfactory quality. Feed-flavours are frequently met with, and, as the cows are usually fresh in milk, the percentage of fat contained is low—from 3·0 to 3·5 per cent., the curd is more sensitive to the action of acid; and, as a result of these conditions, the quality of the cheese is sometimes deficient in meat, short in texture, and unclean in flavour. At some of the factories milk was received from cows that had been milking several months, as well as from those fresh in milk, thus rendering the conditions of manufacturing much more favourable. The work carried on was by no means exhaustive, but the results indicate that the following practice is advisable, when followed with judgment: Milk received at the factories showing weedy or turnipy flavours should either be refused, or manufactured by itself for the supplier's own use. Ripening the milk for setting should be done carefully, so as to guard against over-ripeness. A clean-flavoured starter prepared from Pasteurised milk and by using pure cultures is strongly recommended. Too much emphasis cannot be given to the necessity that the starter be clean and pure. The milk should be set so as to allow two hours and a half to two hours and three-quarters from the time the rennet is added to wheying off. The temperature for setting may be from 82° to 84°, and sufficient rennet may be used to cause coagulation ready for cutting in about 25 minutes. Care should be exercised in cutting and handling the curd. The temperature should be raised gradually—about 1° every five minutes—to 96° Fahr. The whey should be removed when the hot-iron indicates $\frac{1}{16}$in. of acid. Care and judgment must be exercised not to stir the curd too dry, or to allow too much moisture to remain in it before cheddaring. The curd should be turned frequently on the racks, so

as to guard against soakage from whey; and the temperature may be kept about 94° until ready to mill. When the curd shows flakiness, feels smooth, with a clean flavour resembling fresh-made butter, it is ready to mill; and salt may be applied, in from fifteen to twenty minutes after milling, at the rate of from 2lb. to 2½lb. of salt per 1,000lb. of milk, according to moistness of the curd. If the curd has an unclean flavour, it is advisable to mill earlier, so as to allow a longer time for airing before salting. The curd is ready for hooping in about fifteen minutes after salting, and the temperature may be from 80° to 85°. It is well to keep the press-room during the night at a temperature not lower than 60°, and, if this cannot be managed, pour hot water on the hoops at intervals. Extremes in the temperature of the curing-room should be strictly guarded against, and should be maintained at from 60° to 65°. Details of manufacture are gradually changed as the season advances.

Itinerant Instruction.

During the months that the factories were in operation arrangements were made for assistant inspectors to visit the factories and creameries for the purpose of giving instruction to the managers in the different branches of their work, to inspect the condition of the milk on arrival, and condition of cans and factory premises. When milk was being received in bad condition, they usually visited the dairy premises to make an examination, and to offer suggestions as to a remedy, and as far as time would allow they acted as inspectors of dairy premises and herds. They also frequently met with the directors of the factories, and addressed meetings of dairymen on subjects of interest to them and of importance to the dairy industry generally.

Paying for Milk according to Quality.

This equitable system of paying for milk has been adopted almost universally in the butter-factories, and is generally being adopted in the cheese-factories. Complaints continue to be uttered about low tests and variations; but when accurate information is gained, it establishes no evidence against the system or the accuracy of the "Babcock," but that the causes exist before the milk reaches the factory. The testing of milk was very fully gone into at the dairy schools, realising that it was of the greatest importance to the suppliers that the testing be done carefully and accurately, and that managers would require to thoroughly understand it to win their confidence. As a result, a decided improvement in the methods adopted is noticeable, and therefore better satisfaction insured.

Grading of Dairy Produce.

The grading and freezing of butter and the inspection of cheese have been carried out in a satisfactory manner, and it is now almost universally accepted as being one of the most useful parts of the work undertaken. The sending of reports to the factories, containing particulars of the quality and condition of each shipment, occupies considerable time; but the influence is certainly good, as the managers and executives generally accept the suggestions offered. These reports are also sent to the instructors, and they are guided in their work by them, visiting the factories first whose reports show the most faulty manufacture. The grading and stamping may not have attracted much attention in Great Britain, but it has had a strong educational influence on producers, and been of material benefit to them. A limited number of private dairymen are still of the opinion that the stamping of the grade on their butter-boxes is an injustice to them. The argument put forward is that when No. 2 or No. 3 grade is stamped on the boxes the buyers use it as a means to reduce prices. This may be true, but they are also prepared to pay bigger prices for No. 1. The makers of dairy butter have no honest grounds for complaint. Butter must be sold on its merits. A buyer may be prepared to pay 6d. per pound for a parcel of butter of mixed qualities; but if the butter was graded 1, 2, and 3, he would possibly be prepared to pay 7d. for No. 1, 6d. for No. 2, and 5d. for No. 3. Sellers of Nos. 2 and 3 may feel aggrieved at having to take one and two pennies per pound less than seller of No. 1, but it is an untenable argument against the

system of grading that it reduces prices, for, practically, it adjusts them. All butters—creamery, dairy, and milled—were graded and frozen. Cheeses were inspected, but not graded. Under No. 1 grade of creamery and dairy butter was included what may be termed "choicest," "finest," and "fine," and therefore any lots that were graded No. 2 were always an inferior quality, and by no possible chance were they entitled to a higher grade.

The following statements show the total number of boxes and kegs of creamery, dairy, and milled butter, graded Nos. 1, 2, 3, at each shipping port, and the average per cent. of the grades of the entire export, and also the same particulars of creamery butter alone:—

Port of Shipment.	Total Number Boxes and Kegs.	Packages First Grade.	Packages Second Grade.	Packages Third Grade.	Per cent. First Grade.	Per cent. Second Grade.	Per cent. Third Grade.
TOTAL EXPORT OF CREAMERY, DAIRY, AND MILLED BUTTER COMBINED.							
Auckland	9,603	9,407	196	..	98	2	..
Waitara	8,055	7,147	797	111	88	10	2
Wellington	66,966	57,275	8,258	1,433	86	12	2
Lyttelton	8,018	6,384	1,026	608	80	13	7
Dunedin	5,185	4,895	210	80	94	4	2
Totals and percentages	97,827	85,108	10,487	2,232	87	11	2
TOTAL EXPORT OF CREAMERY BUTTER ONLY.							
Auckland	9,326	9,312	14	..	100	..	..
Waitara	5,371	4,947	416	8	92	8	..
Wellington	58,524	53,106	4,943	475	91	8	1
Lyttelton	6,439	6,078	361	..	94	6	..
Dunedin	4,782	4,730	52	..	99	1	..
Totals and percentages	84,442	78,173	5,786	483	93	7	..

In the freezing chambers the temperature of the butter was reduced below that of freezing-point within three or four days after arrival, and preparatory to loading on board ocean steamers. This plan has worked well, and should be continued, unless evidence can be established that it is better to chill butter than to freeze it. At present there is no reliable information on this point; but it is intended to conduct some experiments along these lines next season.

Instructions are given to carry cheese on ocean steamers at a temperature of from 45° to 50°. There are opinions expressed that this is too low, and that on arrival they are too firm in body as a consequence, and do not cut favourably under the tryer. If cheese is sufficiently cured before shipment from the factories—say, four weeks' old—the above temperature should not be too low.

As to condition on arrival in London, if additional information can be secured substantiating that they cut too firm under the tryer, it may be well to allow the temperature to increase 5° or 10° during the last few days on board ship before arrival.

Uniform Packages for Cheese and Butter.

There is still considerable irregularity in the size, shape, and general appearance of the butter-boxes used for export purposes. The finish and appearance of many leave nothing to be desired, while others show bad finish, are too fragile to stand the numerous handlings, and are irregular in size. It is of considerable importance that a uniform box, well finished, and substantially made, be adopted by all exporters of New Zealand butter. The oblong box is

recognised in the trade as coming from New Zealand, and it is considered advisable that all should adopt it. The question was discussed at a meeting of the executive of the National Dairymen's Association of the North Island in February last. Some were in favour of adopting the cube-shaped box, as used in Australia; but it is allowed that there is no advantage in one box as compared with the other in packing, appearance, or in saving of freight-space. A resolution was passed in favour of adopting the oblong box of the dimensions as given below, as a typical New Zealand butter-box. Possibly the kegs used at present, resembling Danish, and the cube-shaped boxes, resembling Australian, possess some trifling advantage in the reflection of the reputation of those butters in the British market; but the quality of New Zealand butter is steadily improving, best qualities being quite equal to choicest Victorian, and as near to Danish as butter can be when six or eight weeks' old as compared with fresh; and therefore why not all go hand in hand in building up a national reputation by exporting choicest qualities in uniform packages? The fragile boxes alluded to are unsuitable, for the reason that many are broken when unloaded at the London docks, and this condition must necessarily cause a financial loss.

Dimensions (containing 57lb. net, to be marked 56lb.): Inside measurement, 10½in. wide, 11in. deep, and 15in. long; ends to be ¾in. thick, and sides, bottom, and top to be ⅝in. thick; double-dressed timber, free from all shakes, knots, and resin.

The same remarks apply to the cheese-cases as to the butter-boxes, that they are irregular in size, shape, and appearance.

The following dimensions combine strength with a minimum of weight, and have a finished appearance:—

Dimensions: Ends and middle pieces to be dodecagon-shape, twelve-sided, about 14½in. in diameter, by ⅝in. thick. Middle piece may be ½in. thick; staves, 3½in. by ½in., by about 25in. long.

A band of hoop-iron or strong wire encircling the ends is a marked improvement, for without them the best cases are frequently damaged.

Inspection of Dairy Herds and Premises.

The inspection of dairy premises and herds was started during the year, and there is no doubt that the initiation of this work was a necessity of the times, and the reports of the Inspectors furnish very interesting information as to condition of premises and herds. Reports are given of premises being kept in good condition, and of dairymen possessing good dairy herds; but the weight of evidence shows that many of the herds are unprofitable, by reason of indifferent breeding and feeding, and the premises in many instances were unclean, especially in wet weather. A large majority of the animals were found to be in a healthy state, while it was necessary to isolate a limited number, and kill a small percentage.

Supervision of Dairy Produce in London.

A surveyor of dairy produce was appointed during the year to report on the condition on arrival at London docks of New Zealand produce, and to furnish any particulars relating to qualities and distribution. Several reports have been received containing information which will be helpful to all interested, and extracts of which are included in the annual report of the department.

A quantity of maize was procured from Canada representing varieties that had been grown successfully there for ensilage purposes—namely: "Canadian Dent," "Smut-nose," "Thoroughbred White Flint," "Sandford Dent," and "Pee and Kay." Small samples were sent to twenty-five farmers in different parts of the country, from Invercargill to Auckland.

The maize was received too late in the season to give it a fair chance, and in many districts a severe frost in midsummer cut it down. Many of the reports received express the opinion that had the seed been sown earlier, and normal conditions existed during the summer, there would have been most satisfactory yields of fodder per acre. It is intended to continue the experiments next summer.

There are (September, 1896) in the colony 73 cheese factories, 73 butter factories, with 16 cheese and butter factories, besides 113 creameries. In the year 1891 there were only 71 cheese and butter factories and 3 creameries. The approximate yearly output of cheese is 9,357,600lb., and of butter 9,008,160lb.

The census industrial statistics show the output still higher, namely: Butter, 11,336,776lb.; and cheese, 9,683,520lb.

NEW ZEALAND FORESTS AND THE TIMBER INDUSTRY.

By Professor T. Kirk, F.L.S.

If the relative importance of the various branches of colonial industry be determined by the value of the output of each, the timber industry occupies the fourth place; but, if it be based on the amount of remunerative employment afforded by each, this industry occupies nearly the first place. The number of saw-mills in working-order at the date of the census (1896) was: In the North Island, 155, employing 2,652 persons; and in the South Island, 144, affording employment to 1,407 persons—a total of 299 mills, requiring the services of 4,059 persons. But this number does not nearly represent the amount of labour employed, as many men engaged in the preliminary work of felling, logging, hauling, building dams, laying tramways, &c., are returned as "bushmen," "contractors," "drivers," &c., without anything to show that they are directly connected with saw-mill work. If these be added, the number of persons employed will certainly be greatly increased. Further, in some districts large quantities of sawn or hewn logs are conveyed to the mills by rail or by coasting-craft; while, in all alike, round or sawn timber constitutes one of the largest items of railway-freight, and in this way gives employment to many more.

General Character of the Forest.

The character of the forest varies greatly in different localities, according to the kind of trees composing it and the degree of luxuriance which they attain. New Zealand forests are usually of a mixed character, some one or two kinds predominating to a greater or less extent. It is but rarely that large areas of forest consist of a single species only; but there are noteworthy exceptions—thus, the mountain forests consist of mountain-beech exclusively; the Oxford and Alford Forests of entire-leaved beech; some large areas are altogether covered with tawa; kahikatea forms uniform forests in swampy districts, and smaller areas are occasionally found containing nothing but kauri. Still, the great bulk of the forest is of a

mixed character. This renders it difficult to lay down well-defined areas for the principal timbers, more especially as most of the trees are generally distributed through the colony. Nevertheless, certain districts may be roughly defined according to the prevailing tree or trees, although the boundaries must of necessity be somewhat vague.

(1.) *The Kauri District.*

This may be defined as that part of the colony lying north of a line drawn from Tauranga to Port Waikato, the kauri being the predominating tree over large portions of the area. In some parts only single trees are found, in others they occur in clumps or groups, sometimes forming extensive groves, or even large blocks, almost to the exclusion of all other trees. Most frequently the kauri will be found mixed with rimu, kahikatea, tanekaha, miro, totara, totara-kiri-kotukutuku, northern rata, puriri, tawa, tarairi, matai, and many other trees, the tawa, as a rule, being most abundant. The nikau, or southern palm, is plentiful all through the district, and is everywhere accompanied by noble tree-ferns and palm-lilies. The underwood is composed of numerous shrubs, and the ground is carpeted with a rich growth of delicate filmy ferns. A large kauri forest is one of the grandest sights to be found in the entire range of the vegetable kingdom; massive columnar trunks, 4ft. to 8ft. in diameter, clothed with smooth grey bark, rise close together often to the height of a hundred feet or more, their spreading arms and deep green leaves presenting a picture of the greatest luxuriance and vigour. At the base of each tree is a large mound of humus, formed by the decay of bark through successive centuries. The surface-soil as well as the humus is charged with resin that has exuded from the fallen leaves or twigs. Some of the most ancient specimens are among the oldest trees in the world, and must have originated in a period long before the Christian era, yet they still exhibit all the life and exuberance of early youth.

In the extensive swamps by the Northern Wairoa and other rivers, the kahikatea forms forests of a remarkable character. The uniformly straight naked trunks often exceed a hundred feet in height, carry very short branches at their tops, and are so close together that at the distance of a few yards the view is completely blocked, and nothing is to be seen but the column-like trunks from 2ft. to 5ft. in diameter; the undergrowth being insignificant.

(2.) *The Totara District.*

Although the totara is distributed throughout the colony, it occurs in larger masses in the central portions of the North Island, more especially on the eastern side. Large areas, in which it is the prevailing tree, are found in many parts south of the Lower Waikato, more especially in the southern parts of Hawke's Bay, the northern portion of the Wellington District, and the Seventy-Mile Bush. In a large portion of the area the totara is sparsely

scattered, and even when most dense is usually intermixed with rimu, tawa, totara-kiri-kotukutuku, kamahi, hinau, kahikatea and other trees. Unlike the kauri the bark of the totara is of a deep brown colour and much furrowed, while the short narrow leaves are of a brownish green. Amongst the most conspicuous trees of this area there are two worthy of special mention, the northern rata and the black maire, which occur in vast abundance in many localities. The former is often found with a distorted trunk of gigantic dimensions clothed with rough brown bark. The latter has a pale bark and yields a timber remarkable alike for its density, strength, and durability. Large portions of the forest, especially on the western side, consist chiefly of tawa, rimu, and kahikatea, which are extensively converted throughout the district, the first-named for dairy-ware and butter-kegs, the two latter for building and general purposes. Tooth-leaved beech, entire-leaved beech, and silver-beech are plentiful on the lower slopes of the mountains, but rarely descend to the sea-level, while mountain beech forms the bulk of the forest at high levels. Rimu and kahikatea are the chief timbers of the moist forests in the valleys of the Manawatu, Rangitikei, and Wairarapa.

(3.) *The Red-pine District.*

This might be termed the low-land pine district of the South Island, as practically it comprises all the forest country in that island below a level of 1,000ft. Although in nearly all localities the forest is of a mixed character, yet from Marlborough to Stewart Island the rimu must be considered the predominating tree, and is the most extensively converted. The kahikatea stands next in abundance, and is closely approached by the kamahi, while the miro, matai, totara, Hall's totara, are generally distributed; but the northern rata and pukatea scarcely occur south of Greymouth. The Westland silver-pine, yellow silver-pine, and quintinia, although not peculiar to Westland, are more abundant there than in any other part of the colony; while the southern rata, which extends to Stewart Island, is especially plentiful in the Tautuku Forest, where it attains very large dimensions. Cedar or pahautea, pokaka, and hinau are not unfrequent, while most of the beeches are plentiful, especially in the southern parts of the district. The undergrowth contains a large variety of shrubs or small trees, many of which afford timbers suitable for ornamental cabinet-work and inlaying.

Much of the rimu and kahikatea in the south-western portion of the Nelson District, and in Westland, is of great height, and very well-grown, in some cases yielding 80,000 superficial feet of converted timber per acre.

The area of heavy forest on the eastern side of the South Island is small; the inland Oxford and Alford Forests consisting chiefly of entire-leaved beech.

(4.) *The Beech District.*

This may be roughly defined as that portion of the South Island between 1,000ft. and 4,000ft. in altitude, for, although the rimu and kahikatea are often found above 1,000ft., yet they rarely occur in any great quantity, or exhibit great luxuriance; so, on the other hand, the different beeches occasionally descend even to the sea-level, although rarely forming any large portion of the forest at extremely low levels. The most valuable forest-tree is the tooth-leaved beech, which attains exceptional luxuriance and large dimensions in the neighbourhood of Te Anau Lake, and many other localities. Silver-beech and entire-leaved-beech are found as far south as Preservation Inlet and the Tautuku Forest, while the mountain-beech prefers higher levels, although occasionally a few specimens descend to the rimu district. None of the beeches extend to Stewart Island, which in many parts is covered with a dense growth of rimu, kamahi, and rata, the kahikatea being extremely rare.

Area of Forest Land.

The following statement of the approximate areas still under forest was published in the report of the Survey Department for the year ending 31st March, 1893:—

	Acres.
Auckland Land District—	
North of Auckland	1,800,000
South "	3,420,000
Taranaki	1,850,000
Hawke's Bay	1,900,000
Wellington	3,400,000
Marlborough	400,000
Nelson	3,240,000
Westland	2,394,000
Canterbury	492,000
Otago	1,182,000
Southland	500,000
	20,578,000

The State forest reserves, including those made for climatic purposes, comprised 1,150,918 acres on 31st March, 1896.

Exploitation and Conversion.

The trees are felled and cross-cut into suitable lengths for conversion, the logs being conveyed to the mill by flotation, by tramline, or, more rarely, hauled by oxen or horses.

Flotation is the method most commonly used in the kauri districts, which are much broken by deep gullies and small streams, opening into tidal creeks. After the trunks are cut into lengths a "rolling-road" is formed to the nearest creek. All the scrub is closely cut down for a width of from twenty-five to thirty feet, and all stumps are removed, while inequalities are reduced so as to obtain an approximately even surface, inclined towards the creek. The logs are forced along this road by timber-jacks, which

the bushmen use with remarkable skill, and are impelled with a rapidity which is simply astonishing to persons unused to the process. If the creek contains plenty of water the logs float to the nearest booms without further trouble, and are drawn out of the water as required, but in many cases the creek does not contain sufficient water to float the logs, and then they are left until heavy rains afford the requisite depth. Often it is necessary to construct costly dams to impound the water in the upper parts of the creek, in order that it may be suddenly liberated when the water in the lower parts is at its greatest depth, so that the entire assemblage of logs may be "driven" to the booms. In dry seasons the logs may remain in the bed of the creek for months, and, occasionally, after a successful "drive," the harvest of logs is carried out to sea and lost, the booms breaking from the immense pressure behind them. Kauri-logs, thus set free, often drift to the coast of the Kermadec Islands, nearly seven hundred miles north-east of the Hauraki Gulf. Tram-lines are less common in the kauri district than in the southern parts of the colony.

In portions of the Taranaki District, where milling timber is somewhat sparse, timber-wheels are commonly used; but in nearly all places where milling timber is plentiful a tramway is constructed. Kamahi, or other common timbers are used for sleepers. Rails are sawn out of better stuff, and laid in notches cut in the sleepers, being tightly fixed by wooden wedges. Haulage is usually effected by horse-power, but in some cases the tramway is built in a more substantial manner, light steel rails being used instead of wood, and the logs are hauled by a steam motor. The maximum proportion of tramway required is half a chain per acre. Loading places are constructed alongside the line, at a distance of twenty or thirty chains apart, to which the logs are hauled by oxen. If of large size, the timber-jack is employed to facilitate loading. It is not considered profitable to haul logs from a greater distance than ten chains on either side of the tramway. It is in the Southland forests, where there is a large extent of comparatively level land, that the tramway is most used.

The sawmill is usually worked by steam power, rarely by water, and may vary from the magnificent mills of the Auckland District to the small portable engine and movable saw-bench commonly seen in a block newly opened for settlement. For their completeness, and the quality of their machinery, the Auckland mills are equal to any in the world. They are fitted with vertical breaking-down saws, capable of dividing the largest logs into halves or flitches, as may be required; vertical frame-saws for converting the flitches into boards, and circular saw-benches having rack adjustments for the conversion of scantling. Planing machines of the best pattern, tonguing and grooving machinery, moulding machines, as well as machines for the manufacture of doors and sashes, coopers' staves, gates, wheelwrights' stuff, &c., &c., are to be seen on all sides. Some of the mills are furnished with the electric

light, so as to allow of work being carried on through the night when required, and in a few cases arrangements are made for seasoning converted timber by the hot air process. In the totara and rimu districts the mills are less complex, of smaller extent, and driven by less powerful engines. Breaking-down is commonly effected by the circular saw, and in the case of very large logs by two circular saws, an upper and a lower working in the same vertical plane. Vertical frame-saws can scarcely be said to have been brought into general use, although they are becoming more common. A circular-saw bench, with rack adjustment, serves for the conversion of boards and scantling. Planing is effected by a simple machine with revolving cutters. Machines for tonguing and grooving and for moulding are to be found in nearly every mill, the former usually combined with the planing-machine. Planing-machines of a better type are coming into use, and, at one or two of the Hokitika mills, wide boards and panels, suitable for ornamental cabinet-work, are turned out by frame-saws in a style that could not be surpassed either in England or the United States.

Output and Labour.

The value of the total output of sawn timber, planed flooring and skirting, mouldings, doors, and sashes, for the entire colony during the year 1895, has been stated by the Registrar-General as £898,607. This amount is £65,848 above that of the previous census, 1891. At the census of 1891, twenty-five mills had been closed, and the number of persons employed had fallen from 5,042 to 3,266, many of the mills working even less than half-time. Since that date the trade has improved, and its volume is increased. Of the total output for 1895 the forty-nine Auckland mills contributed nearly one-half, the value of their output being £430,913, whereas the manufactures of the 250 mills in the other provincial districts were valued at £467,894. The sum paid in wages during the same year is stated at £323,223; but this includes only a portion of the amount paid to the bushmen, fellers, and others engaged in preparing the logs for conversion, as many mills purchase logs from settlers, or employ contractors, who deliver the logs at the mill at fixed rates.

The approximate value of land, buildings, machinery, and plant was returned as under: Land, £186,958; buildings, £100,667; machinery and plant, £298,797: total, £586,422.

In the kauri district, bush-hands are commonly paid 20s., or rarely, 18s. per week, with board and lodgings, the accommodation in some cases being plain, but amply sufficient in so mild a climate, the board plentiful and of good quality. In some instances, married bush-hands put up a rough cottage, the larger part of the material being supplied by the manager free of cost, and sometimes enclose a small garden; in this case saving the cost of rent and firing, while securing a large amount of comfort at a minimum of expenditure. On the other hand, the cost of flour and other provisions is some-

what higher than in the towns, on account of the heavy charges for freight.

At page 49 of the Report of the Labour Department (H.–10, 1893), it is stated that a sawmill hand returned his average yearly earnings, after allowing for lost time, at £115. A bushman, under the same conditions, returned his earnings at £92 8s. As a general rule, wages for adults are a little higher in Westland than in any other district on account of the higher cost of living. On the other hand, they are slightly lower in the Auckland District, where compensation is found in the greatly-reduced cost of living. In Southland, benchmen are paid at the rate of 9s. per day, or £12 per month when in work; ordinary mill-hands, 6s. 6d. to 8s.; planing-machine men and bushmen, 7s. to 8s. per day; engine-drivers, 7s. to 8s.; bullock-drivers, 7s. to 8s.

Timber Export.

The following table shows the gradual development of the export trade, and its present position:—

Year.	Sawn and Hewn Timber. Quantity. Ft.	Value. £
1871	3,214,742 ..	14,200
1875	5,225,627 ..	26,914
1881	13,180,280 ..	65,119
1888	43,474,434 ..	177,877
1889	42,568,600 ..	176,608
1890	42,098,863 ..	181,689
1891	42,824,365 ..	182,431
1892	22,860,551 ..	87,581
1893	26,718,046 ..	101,082
1894	31,901,415 ..	116,116
1895	38,207,905 ..	141,892

By far the greater portion of exported timber consists of kauri, the proportion of other timbers being almost insignificant; thus, in 1887 the quantity of kauri exported was 30,230,084 superficial feet, valued at £124,347; all other timbers, 1,404,380 superficial feet, valued at £4,475. The export of rimu and kahikatea is, however, increasing, although not very rapidly; up till now the greater part has been shipped from the Bluff, but the completion of the Hokitika and Greymouth Railway may probably lead to considerable shipments being made from the latter port. Figured rimu, which is plentiful in the Westland forests, could be placed on the London market at a low price, either as selected board or as logs, if arrangements could be made for shipments at regular intervals.

The remarkable falling-off in the export of 1892 was caused by the terrible commercial depression experienced throughout the Australian colonies as well as in New Zealand. The returns for 1893, 1894, and 1895 show that a marked improvement has since then taken place.

Varieties of Timber Trees.

The chief timbers and timber-trees of New Zealand may fairly be divided into three classes:—

I.—*Timbers of Great Durability and Large Dimensions, suitable for Constructive Works, House-building, or for Special Purposes.*

1. Kauri (*Agathis australis*), Salisbury.
2. Totara (*Podocarpus totara*), A. Cunningham.
3. Totara-kiri-kotukutuku (*Podocarpus hallii*), T. Kirk.
4. Matai (*Podocarpus spicata*), R. Brown.
5. Kawaka (*Libocedrus doniana*), Endlicher.
6. Pahautea, or cedar (*Libocedrus bidwillii*), Hooker f.
7. Northern manoao (*Dacrydium kirkii*), F. Mueller.
8. Southern manoao (*Dacrydium colensoi*), Hooker.
9. Westland pine (*Dacrydium westlandicum*), T. Kirk.
10. Yellow silver-pine (*Dacrydium intermedium*), T. Kirk.
11. Puriri (*Vitex littoralis*), A. Cunningham.
12. Tawhai raunui, tooth-leaved beech (*Fagus fusca*), Hooker f.
13. Tawhai rauriki, entire-leaved beech (*Fagus solandri*), Hooker f.
14. Tawhai, Blair's beech (*Fagus blairii*), T. Kirk.
15. Maire raunui (*Olea cunninghamii*), Hooker f.
16. Maire (*Olea lanceolata*), Hooker f.
17. Narrow-leaved maire (*Olea montana*), Hooker f.
18. The northern rata (*Metrosideros robusta*), A. Cunningham.
19. The southern rata (*Metrosideros lucida*), Menzies.
20. Pohutukawa (*Metrosideros tomentosa*), A. Cunningham.
*21. Small-leaved pohutukawa (*Metrosideros polymorpha*), Forster.
22. Manuka rauriki (*Leptospermum ericoides*), A. Richard.
23. Maire tawhake (*Eugenia maire*), A. Cunningham.
24. Kowhai (*Sophora tetraptera*), Aiton.

II.—*Timbers suitable for General Building Purposes, or for Special Uses, but of less Durability than the preceding kinds.*

25. Rimu, red-pine (*Dacrydium cupressinum*), Solander.
26. Kahikatea, white-pine (*Podocarpus dacrydioides*), A. Richard.
27. Miro toromiro (*Podocarpus ferruginea*), Don.
28. Tanekaha (*Phyllocladus trichomanoides*), Don.
29. Toatoa (*Phyllocladus glauca*), Carr.
30. Mountain toatoa (*Phyllocladus alpinus*), Hooker f.
31. Tawhai rauriki, mountain beech (*Fagus cliffortioides*), Hooker f.
32. Tawhai, silver-beech (*Fagus menziesii*), Hooker f.
33. Pukatea (*Laurelia novæ-zelandiæ*), A. Cunningham.
34. Hinau (*Elæocarpus dentatus*), Vahl.
35. Pokaka (*Elæocarpus hookerianus*), Raoul.
36. Tarairi (*Beilschmiedia tarairi*), Bentham and Hooker f.
37. Tawa (*Beilschmiedia tawa*), Bentham and Hooker f.
38. Titoki, tokitoki (*Alectryon excelsum*), De Candolle.
39. Tawari (*Ixerba brexioides*), A. Cunningham.
40. Mangeao, tangeao (*Litsea calicaris*), Bentham and Hooker f.
41. Rewarewa (*Knightia excelsa*), R. Brown.
42. Tawhero (*Weinmannia silvicola*), Banks and Solander.
43. Towhai, or kamahi (*Weinmannia racemosa*), Forster.
44. Porokaiwhiri (*Hedycarya dentata*), Forster.
45. Kohekohe (*Dysoxylum spectabile*), Hooker f.

* Found only in the Kermadecs.

III.—*Timbers of Small Dimensions, adapted to Special Purposes.*

46. Horopito (*Drimys axillaris*), Forster.
47. Tarata (*Pittosporum eugenioides*), A. Cunningham.
48. Karo (*Pittosporum crassifolium*), Banks and Solander.
49. Tawhiwhi (*Pittosporum tenuifolium*), Banks and Solander.
50. Mahoe (*Melicytus ramiflorus*), Forster.
51. Huoi, or manatu (*Plagianthus betulinus*), A Cunningham.
52. Wharangi (*Melicope ternata*), Forster.
53. Kaikomako (*Pennantia corymbosa*), Forster.
54. Ake (*Dodonæa viscosa*), Linné.
55. Karaka (*Corynocarpus lævigata*), Forster.
56. Putaputa-weta (*Carpodetus serratus*), Forster.
57. Kumarahou (*Quintinia serrata*), A. Cunningham.
58. Makamaka (*Ackama rosæfolia*), A. Cunningham.
59. Manuka, or kahikatoa (*Leptospermum scoparium*), Forster.
60. Ramarama (*Myrtus bullata*), Banks and Solander.
61. Small-leaved Ramarama (*Myrtus ralphii*), Hooker f.
62. Rohutu (*Myrtus obcordata*), Hooker f.
63. Rohutu (*Myrtus pedunculata*), Hooker f.
64. Kotukutuku, or kohutuhutu (*Fuschsia excorticata*), Linné.
65. Horoeka, lancewood (*Pseudopanax crassifolium*), Seeman.
66. Toothed lancewood (*Pseudopanax ferox*), T. Kirk.
67. Papauma (*Griselinia littoralis*), Raoul.
68. Puka (*Griselinia lucida*), Foster.
69. Tree karamu (*Coprosma arborea*), T. Kirk.
70. Yellow-wood (*Coprosma linariifolia*), Hooker f.
71. Tupari (*Olearia colensoi*), Hooker f.
72. Akeake (*Olearia traversii*), Hooker f.
73. Heketara (*Olearia cunninghamii*), Hooker f.
74. Akeake (*Olearia avicinniæfolia*), Hooker f.
75. Neinei (*Dracophyllum latifolium*), Hooker f.
76. Mountain neinei (*Dracophyllum traversii*), Hooker f.
77. Inaka (*Dracophyllum longifolium*), R. Brown.
78. Toro (*Myrsine salicina*), Heward.
79. Mapau (*Myrsine australis*), A. de Candolle.
80. Tawaapou (*Sideroxylon costatum*), Bentham and Hooker f.
81. Maire (*Fusanus cunninghamii*), Bentham and Hooker f.
82. Ngaio (*Myoporum lætum*), Banks and Solander.
83. Toru (*Persoonia toro*), A. Cunningham.
84. Milk-tree (*Paratrophis microphyllus*), Bentham and Hooker f.
85. Makomako (*Aristotelia racemosa*), Hooker f.
86. Tumatukuru (*Discaria toumatou*), Raoul.

A brief description of each of the above species will be found below. The weight per cubic foot, unless otherwise specified, is invariably for *seasoned* timber :—

Class I.

1. KAURI (*Agathis australis*), Salisbury; "Forest Flora of New Zealand," Plates 79 to 81. North Cape to Maketu and Kawhia.

This is the finest tree in New Zealand, and affords the most valuable timber. It varies from 80ft. to 100ft. and upwards in height, with a trunk from 3ft. to 8ft. in diameter; but specimens have been measured with a diameter of fully 22ft.

The bark is smooth, of a dark-grey colour, and falls away in large flat flakes. The leaves are rather close-set, very thick and rigid, 1in. to 3in. long; and the handsome globular cone is nearly 3in. in diameter.

The timber is of the highest value, and combines a larger number of good qualities in a high degree of perfection than any other pine timber in general

use; for, while of great strength, it is of high durability, and unites a firm, compact texture with great silkiness, so that it is worked quite as easily as the best Quebec yellow pine.

Many logs are beautifully clouded, feathered, or mottled, and are highly valued for ornamental cabinet-work, panelling, &c., realising from £7 to £10 per 100ft. superficial. Ordinary wood without figure is used for wharves, bridges, and constructive works generally; squared piles, railway sleepers, ship-building (especially for deck planking), house-building, fencing, and other purposes too numerous to mention.

It is exported to a greater extent than any other New Zealand timber, and affords employment to nearly one-third of the entire number of persons engaged in timber conversion. Its turpentine constitutes the valuable resin known as kauri-gum, in gathering which nearly 7,000 persons are employed.

Its specific gravity varies from 0·498 to 0·700. Its relative strength when compared with English oak is as 892 to 1,000; weight per cubic foot when seasoned, 37·11lb. to 42lb. The mean average breaking-weight obtained from twelve specimens is 165·5lb.

2. TOTARA (*Podocarpus totara*), A. Cunningham; "Forest Flora," Plate 115. Mongonui to Southland.

The totara stands next to the kauri for general utility, and, being more widely distributed, is by some considered of equal, or even greater, value; but, though equalling kauri in durability and the facility with which it can be worked, it is inferior in strength, and will not take so high a finish. The tree is usually from 60ft. to 80ft. in height, the trunk having a diameter of from 2ft. to 6ft., but specimens 100ft. high, with a diameter of 8ft., are not infrequent. The trunk is clothed with fibrous brown bark, which is deeply furrowed, and in very old specimens is fully 3in. thick. The leaves are about ½in. long, linear, and of a greenish-brown tint. The wood is of a reddish-brown colour, and does not warp or twist. It is clear and straight in the grain, and, therefore, easily worked. It is of extreme durability, and is largely employed for building purposes, bridges, wharves, telegraph-posts, railway-sleepers, house-blocks, fencing-posts, and various other purposes. Owing to its unrivalled power of resisting the attacks of the teredo, it is highly valued for marine piles, and is unquestionably the best timber in the colony for that purpose. Many of the large canoes of the Maoris were hewn out of a single trunk.

A well-grown totara forest has an imposing effect: majestic trunks, 60ft. or 80ft. to the first branch, tapering with the greatest regularity, grow so close together that very little top is developed; and the yield of first-class timber is enormous, sometimes amounting to 80,000 or even 100,000 superficial feet per acre. Usually, however, the trees are of smaller dimensions, and the trunks are often distorted, and cannot be converted without a large proportion of waste.

The specific gravity of totara is 55·9; weight per cubic foot when seasoned, 35·17lb.; breaking-weight, 133·6lb., the mean average of seventeen specimens.

3. TOTARA-KIRI-KOTUKUTUKU (*Podocarpus hallii*), T. Kirk; "Forest Flora," Plates 9, 9a. Mongonui to Stewart Island.

This fine tree bears a close resemblance to the preceding species, *P. totara*, but is distinguished by the larger leaves, which are from ¾in. to 1¼in. long, and especially by the thin bark, from which its native name, Totara-kiri-kotukutuku, or fuchsia-barked totara, is derived. It also differs in the male catkins being carried on short stalks, and in the fruits being pointed at the apex, while in the true totara the male flowers are destitute of flower stalks, and the fruits are rounded at the apex. The wood resembles that of the true totara, but is not of equal value for marine piles; it is, however, used for all purposes for which the true totara is employed. The Maoris of Stewart Island employ the thin bark for packing mutton-birds, which form a valuable article for exchange with the northern tribes.

4. MATAI (*Podocarpus spicata*), R. Brown; "Forest Flora," Plates 4, 5. Mongonui to Otago.

The matai or black-pine, as it is often called by settlers, is a round-headed tree with erect branches, rarely exceeding 60ft. in height, with a trunk 2ft. to 3ft. in diameter, although larger specimens are occasionally met with. The leaves are close-set, about ½in. in length, of a bright green above, but whitish beneath. The fruits are spherical, less than ¼in. in diameter, of a bright-red colour, and arranged in terminal spikes. In the young plant the branchlets are extremely slender and pendulous, with larger leaves, which are of a deep-bronze colour. The aspect differs so widely from that of the mature plant that its identity is usually denied by superficial observers. Its rate of growth is extremely slow. The timber is of a red or yellowish-brown tint; it is straight in the grain, firm, dense, heavy, of great strength and durability, while it is easily worked. It is largely employed for bridges and constructive works, house-blocks, framing, joists, weatherboards, railway-sleepers, piles, millwrights' work, bed-plates, &c., and is especially valued for the flooring of churches and other public buildings, although, on account of its hardness, it cannot be laid so quickly as other kinds. Its specific gravity varies from 0·572 to 0·792; its weight per cubic foot, when seasoned, from 46·862lb. to 47·508lb.; and its breaking-weight is 384·031lb. for a piece 2ft. long and 1in. by 1in., supported at each end and loaded in the centre.

5. KAWAKA (*Libocedrus doniana*), Endlicher; "Forest Flora," Plate 82. Hilly parts of the North Island, Mongonui to Taranaki.

This is also termed kaikawaka by the Maoris, but unhappily this name has been commonly applied by surveyors and bushmen to the next mentioned species. It is known to many settlers as the New Zealand *arbor vitæ*. It is a noble tree of conical outline, sometimes 100ft. high, with a trunk from 2ft. to 5ft. in diameter; and, like the next species, may be distinguished from other New Zealand pines by the old bark falling away in long thin ribbons, which are pendent from the trunk along its entire length. The branchlets are much flattened, and clothed with imbricating scale-like leaves. The fruit is a small cone, consisting of four woody scales, each with a short spine on the outside; each seed is furnished with a membranous wing. The wood is of a dark-red colour with darker streaks; it is straight and even in the grain, and often very ornamental. It is extremely durable, somewhat stronger than the next species, and has been used for general building purposes, fencing-posts, shingles, palings, &c.; but is especially valued by cabinetmakers on account of its ornamental character, and the facility with which it takes a high finish. It is one of the rarest timbers, and has become much too valuable to be used for general purposes.

6. PAHAUTEA, or CEDAR (*Libocedrus bidwillii*), Hooker f.; "Forest Flora," Plate 83. From the head of the Hauraki Gulf to Southland, chiefly in hilly districts.

The pahautea is closely related to the kawaka, but is usually of smaller size, and the ultimate branchlets instead of being flattened are four-sided. It forms an elegant cone-shaped tree 40ft. to 70ft. high, with a trunk from 1ft. to 2½ft. in diameter, although larger specimens are occasionally found. The bark is loose and pendent, as in the preceding species, but the flakes are not so broad, and are rather more fibrous. The leaves are similar to those of the kawaka, and the cones are rather smaller, each bearing two winged seeds. The wood is remarkably straight in the grain, but light and rather brittle: it is of a uniform dull red colour, extremely durable in all kinds of situations. It is largely used for general house building, fencing, house-blocks, telegraph-posts, railway-sleepers, bridges, and other purposes for which great durability is required. In this quality it appears to surpass totara. On account of its brittle character it should not be used for beams, flooring-joists, or other purposes for which great strength is required. It is excellent for venetian blinds, and stands much better than the imported redwood of California. When seasoned, its weight per cubic foot is 26·306lb.

to 28·611lb. Its breaking-weight is only 99·981b.; it is therefore the weakest of all the New Zealand pines.

7. NORTHERN MANOAO (*Dacrydium kirkii*), F. Mueller; "Forest Flora," Plate 97. Hokianga, Bay of Islands, north of the Auckland Isthmus.

The manoao of the North Island is a handsome pyramidal or conical tree, 40ft. to 100ft. in height, with a trunk 2ft. to 3ft. or rarely 4ft. in diameter. It is remarkable for exhibiting leaves of two widely different kinds: in the young state the leaves resemble those of the true silver-fir, and are from 1in. to 1½in. long, spreading and acute; these pass most abruptly into imbricating scale-like leaves, so closely appressed that the branchlets resemble stout whipcord. The male and female flowers are carried on different plants, and the fruits, which are set in a small fleshy orange-coloured cup, are aggregated near the tips of the branchlets.

The wood is of a yellowish-brown colour, very compact, elastic, of great strength and extreme durability. Unfortunately it is scarcely known in commerce, although some years back it was placed on the Auckland market under the name of "Barrier pine."

8. SOUTHERN MANOAO (*Dacrydium colensoi*), Hooker; "Forest Flora," Plate 96. Ruapehu to Stewart Island.

The southern manoao has a close resemblance to *D. kirkii*, but is usually of smaller dimensions. The linear leaves are about ⅜in. long, and the appressed scale-like leaves are keeled on the back. The wood is similar in quality to *D. kirkii*, but of a deeper colour. It ascends the mountains to nearly 4,000ft., but is often reduced to a dwarf shrub.

9. WESTLAND PINES (*Dacrydium westlandicum*), T. Kirk; "Forest Flora," Plate 85. Whangaroa North, Great Barrier Island, and Ngauruhoe district; the west coast of South Island, and Martin's Bay.

This is often called "silver-pine," or "white silver-pine" to distinguish it from the next species, which is known as "yellow silver-pine." It forms a small tree, usually from 40ft. to 50ft. high, with a trunk 1ft. to 2½ft. in diameter, and rather short branches, which are thickly covered with an immense number of very short slender branchlets. In the young state the leaves are about ⅛in. long, awl-shaped and spreading; in the mature state they resemble minute scales closely imbricated all round the stem, so that the branchlets resemble fine whipcord.

Although of small dimensions, its timber is of great value, as it is of extreme durability, combined with great strength, toughness, and elasticity. It is clear in the grain, dense, firm, and compact, charged with resin, and of low specific gravity. When seasoned it has a yellowish satiny lustre, and takes a high finish. It shrinks but little in drying. It has been employed for piles, bridges, wharves, and other constructive works; for marine piles it is fully equal to totara. It has been much used for furniture, and from the unusual combination of great strength and toughness, with extreme durability, is admirably suited for the woodwork of agricultural implements, &c. Recently it has been largely converted for railway-sleepers.

10. YELLOW SILVER-PINE (*Dacrydium intermedium*), T. Kirk; "Forest Flora," Plate 86. Great Barrier Island, Thames Goldfield, and central parts of the North Island; west coast of Nelson, Westland, and Otago; Stewart Island.

This species is also called the "mountain pine," as it ascends the mountains to 4,000ft. Usually it is a handsome conical or round-headed tree, 40ft. high and upwards, with a trunk 1ft. to 2ft. in diameter. Old specimens growing in open situations are very beautiful, as the branchlets are pendulous and easily swayed by the wind. In the young state the leaves are narrow, awl-shaped, and spreading, ½in. to ⅝in. long; but in the mature state they are reduced to imbricating scale-like processes $\frac{1}{20}$in. long, with a slight ridge on the back. The wood is very resinous, reddish-yellow, straight-grained, compact and even, combining great strength with extreme durabilty.

It is applied to the same purposes as the preceding species, and is especially valued for boat-building. It is now used for railway-sleepers, and might also be employed in the manufacture of agricultural implements. It is considered to excel the white silver-pine in durability; if its dimensions were larger it would be one of the most valuable timbers in the colony.

11. PURIRI (*Vitex littoralis*), "Forest Flora," Plate 105. North Cape to Poverty Bay and Taranaki.

The puriri is often called the New Zealand oak, on account of its great strength. It is, however, more closely allied to teak. It forms a handsome tree from 40ft. to 60ft. high, with a trunk 2ft. to 5ft. in diameter. The tree is smooth in all its parts, and the bark is thin and almost white. The leaves are of a deep, glossy green, consisting of from three to five stalked leaflets, 2in. to 5in. long, springing from the apex of a stout stalk. The leaflets are about 3in. wide. The flowers are red or (rarely) white, forming panicles which spring from the axils of the leaves. They are of irregular shape and about 1in. long. The fruits are spherical, red, and enclose a curious club-shaped nut containing four seeds. The wood is excessively hard, dense, heavy, and is the strongest as well as the most durable timber in the colony. It is of a dark-brown colour, with the fibres crossed and interlaced, so that very often it is difficult to work, although, as a rule, it splits easily, except in aged trees, when it is necessary to employ blasting-powder. It is extensively used for fence-posts, house-blocks, piles, culverts, bridges, &c., and is the most durable of all timbers employed for railway-sleepers. Unhappily, it has become comparatively rare in districts where it was formerly abundant.

12. TOOTH-LEAVED BEECH (*Fagus fusca*), Hooker f.; "Forest Flora," Plates 90, 91. Ahipara to Southland.

This fine tree is the tawhai, or tawhai-rau-nui of the Maoris; the black-birch of the settlers in Auckland, parts of Otago and Southland; the red-birch of Wellington, Nelson, and parts of Otago; and bull-birch of the Southern Lake District. So much trouble and loss have been caused by the misleading common names used in different districts, that the name of tooth-leaved beech has been brought into use to supersede them, and is generally adopted in the Government departments.

Tooth-leaved beech is a noble tree, from 80ft. to 100ft. high, or more, with a trunk from 2ft. to 10ft. in diameter, clothed with rough, deeply-furrowed bark, which in the mature state is of a deep-rich-brown colour, easily recognised at a short distance, but scarcely distinguishable at close sight; it is often black or blackish-brown. The leaves are larger than those of any other New Zealand beech. They are from $\frac{3}{4}$in. to $1\frac{1}{2}$in. in length, and from $\frac{1}{2}$in. to $\frac{3}{4}$in. broad, somewhat variable in shape, but always wedge-like at the base. When first developed they are clothed with short, downy hairs, which speedily disappear after the leaves attain their full size. The upper portions of the margins are cut into sharp, rather coarse teeth. The fruits are woody cups formed of four valves or leaves, each valve having curious membranous transverse bands or plates on the outside, and the cup contains three or four three-sided nuts, with a narrow membranous wing produced from each angle.

The wood is of a red colour, very tough, of great strength and high durability; consequently it is extensively used for bridges, railway-sleepers, piles, house-blocks, mine-props, also for house-framing, flooring, joists, and weather-boarding. As the timber is easily split, it is much used for fencing, which, when properly erected, should last for forty years.

The weight, when seasoned, is 34·124lb. to 40·648lb. per cubic foot. The breaking-weight varies from 156·83lb. to 262 5lb. It must rank amongst the most valuable timbers in the colony.

13. ENTIRE-LEAVED BEECH (*Fagus solandri*), Hooker f.; "Forest Flora," Plate 56. Cape Runaway to Otago; chiefly in lowland districts: often local.

Like the preceding species, the entire-leaved beech has different names in different districts; black-birch, white-birch, red-birch, black heart birch are

amongst the most common. It is sometimes termed tawhairauriki by the Maoris. It is a handsome tree, commonly from 60ft. to 90ft. high, with a trunk 3ft. to 4ft. in diameter, although specimens 100ft. high and upwards, with still larger trunks, are not infrequent. The leaves are small, about ½in. long and $\frac{3}{16}$in. broad, oblong and quite entire; white beneath, and of very thick texture. The fruits are small. The wood is pale red, or greyish, in colour, often streaked with darker markings; the heart-wood is black, and irregular in outline. It is very strong, tough, and durable if used when thoroughly ripe and properly seasoned. The wood of immature trees, or of trees that have stood too long, is not satisfactory. The weight per cubic foot when seasoned is 40·292lb., and the breaking-weight 339·531b.

14. Blair's Beech (*Fagus blairii*), T. Kirk; "Forest Flora," Plate 57. Central parts of North Island; Buller River and Little Grey; Lake Ohau; Lake Wakatipu and Dart Valley.

This handsome tree resembles the European beech more closely than any other New Zealand species, but has larger leaves, which are quite entire, green above and yellowish-brown beneath. It is usually 50ft. to 60ft. in height, with a trunk 2ft. to 3ft. in diameter.

The timber is similar to that of the entire-leaved beech, but somewhat smoother in the grain.

15. Maire-raunui (*Olea cunninghamii*), Hooker f.; "Forest Flora," Plates 59A and 59B. Mongonui to Marlborough and Nelson.

A noble tree; one of the most valuable in the colony for strength and durability. It is from 50ft. to 70ft. high, with a trunk 3ft. to 6ft. in diameter; the leaves of young plants differ widely from those of the mature state, being from 6in. to 10in. long and about ⅜in. broad; those of mature trees are from 3in. to 6in. long and nearly 2in. broad. The flowers are arranged in racemes developed in the axils of the leaves, and being destitute of petals are inconspicuous. With the exception of the puriri and manoao, it is the strongest timber in the colony. It is of a deep brown colour, dense, compact, even and straight in the grain, while it is easily worked, and takes a good finish; it is of extreme durability, and when fully mature exhibits but little sap-wood. It is suitable for bridges, wharves, and constructive works generally; for railway-sleepers, farm-gates, posts, &c., and for the framing of railway-carriages and wagons. It has been used for machine-beds, bearings, &c., framing for heavy machinery, millwrights' work, and agricultural implements. Old specimens are beautifully streaked and figured, and are in demand for ornamental cabinet-work, veneers, ornamental turnery, &c. Its specific gravity varies from 1·113 to 1·193; weight per cubic foot, 70·63 to 74·401b.; breaking-weight, 327lb. to 335lb.

16. Maire (*Olea lanceolata*), Hooker f.; "Forest Flora," Plates 60, 61. Mongonui to Marlborough and Nelson.

The white maire, as it is often called by the bushmen, forms a round-headed tree 30ft. to 50ft. high, with a trunk 1ft. to 3ft. in diameter, clothed with white bark. The smooth, glossy, pointed leaves are about 3in. long, with veins prominent on both sides. The flowers are inconspicuous, and are followed by trigonous, bright-red fruits, containing a single seed. The wood is firm, even, compact, very strong, and durable, but of smaller dimensions than the preceding, and is used for similar purposes.

17. Narrow-leaved Maire (*Olea montana*), Hooker f.; "Forest Flora," Plate 29. Whangaroa North to Nelson.

A twiggy, round-headed tree, 20ft. to 50ft. high, or more, with a trunk 1ft. to 2ft. in diameter, clothed with brownish-grey bark. The timber closely resembles that of the preceding species, and is applied to the same purposes. It has also been used for the teeth of gearing-wheels, &c.

18. The NORTHERN RATA (*Metrosideros robusta*), A. Cunningham; "Forest Flora," Plate 128. North Cape to Greymouth.

The northern rata forms a noble tree, with an irregular head. It is sometimes 100ft. in height and 3ft. to 12ft. in diameter. It was formerly supposed to be a climber, owing to its peculiar habit. The dust-like seeds are often blown into the forks of lofty trees, and readily germinate in the mould formed by the decay of epiphytic vegetation, so that very often the plant commences life at a great height above the ground, and continues to grow in this position for a longer or a shorter period, until its store of nutritive material is exhausted, when it sends one or more aërial roots down the stem of the supporting tree. The aërial roots enter the soil, and, drawing larger supplies of food, soon become changed into stems. Some of these stems have been found over 20ft. in diameter. Sooner or later the supporting tree is killed by the usurping rata: if two or more aërial roots are given off it is squeezed to death; and the dead stem may retain its position for years, sometimes completely hidden as the rata stems increase in bulk. The leaves are about 1½in. long, quite entire, and of rather thick texture. The flowers form compact clusters at the tips of the branchlets, and present a brilliant appearance.

The wood is of a dull-red colour, plain, straight in the grain, dense, and heavy; it is durable, and of great strength. Its large tortuous limbs are often used for ship timbers, and it is in demand for the arms of telegraph-posts. It is suitable for the framework of railway-wagons, for bearings, machine-beds, bridges, wheelwrights' work, &c., and is highly valued for firewood.

19. The SOUTHERN RATA (*Metrosideros lucida*), Menzies; "Forest Flora," Plate 58. Great Barrier Island and Thames Goldfield to Auckland Islands.

The southern rata, or ironwood, is easily recognised by the pale-coloured twigs, sharp-pointed leaves, and large panicles of bright-scarlet flowers, and invariably terrestrial habit. One of the most magnificent sights the colony has to offer is a mountain-slope covered with the southern rata when the brilliant flowers are touched by the rising sun—rarely the flowers are of a lustrous golden-yellow. The wood has similar qualities to the northern rata, but it is often gnarled and twisted; it is of great strength and durability, and is used for similar purposes. It is considered of higher value than the preceding species for heavy framing; it is of smaller dimensions, rarely exceeding 50ft. to 60ft. in height, and 2ft. to 6ft. in diameter; at great altitudes it is reduced to a mere shrub. Its specific gravity varies from 1·010 to 1·146; its weight per cubic foot from 62·953lb. to 71·429lb., and its breaking-weight from 175lb. to 255·41lb.

20. POHUTUKAWA (*Metrosideros tomentosa*), A. Cunningham; "Forest Flora," Plate 118. North Cape to the Mimi River, Taranaki.

The pohutukawa sometimes attains a height of 70ft., with a trunk from 2ft. to 4ft. in diameter, and large, irregular, massive, spreading arms. The brown bark is much furrowed and wrinkled. The leaves are simple, from 1in. to 4in. long, and ¾in. to 1½in. broad; of thick texture, silvery-white beneath. The flowers are of a deep blood-red colour, and form dense compact panicles at the tips of the branches. When in full flower a fine tree forms a magnificent object. The wood is excessively dense, very strong, and of great durability. It is extensively used for ship-building, machine-beds, bearings, trenails, &c., and for various special purposes.

21. SMALL LEAVED POHUTUKAWA (*Metrosideros polymorpha*), Forster; "Forest Flora," Plate 119. Kermadec Islands.

This species is abundant on the Kermadecs, but does not occur elsewhere in the colony. It is somewhat smaller than the preceding species, and affords timber of similar quality. In a few years it will prove of great value to Auckland shipbuilders, as the pohutukawa is becoming rare in many localities.

22. MANUKA-RAURIKI (*Leptospermum ericoides*), A. Richards; "Forest Flora," Plate 69. North Cape to Otago.

An attractive tree with slender branches, clothed with short linear leaves ¼in. long, and producing an profusion of small white flowers. Its height is from 40ft. to 60ft., and the trunk is from 1ft. to 3ft. in diameter, clothed with thin bark, which falls away in long narrow flakes. The timber is straight-grained, compact, heavy, tough, and elastic, usually of a red colour. It is of great strength and durability, and is largely used for piles, bridges, marine jetties, house-blocks, fence-rails, wheelwrights' purposes, cogs for machine wheels, axe-handles, &c., and is highly prized for firewood. In the young state it is often called white tea-tree. Its specific gravity varies from 0·906 to 1·042; its weight when seasoned from 56·46lb. to 64·95lb. Its breaking-weight is from 200lb. to 302lb.

23. MAIRE-TAWHAKE (*Eugenia maire*), A. Cunningham; "Forest Flora," Plate 122. Mongonui to Queen Charlotte Sound, Pelorus.

The maire-tawhake is a handsome conical tree, 25ft. to 50ft. high, with a straight trunk 1ft. to 2ft. in diameter, clothed with thin white bark; the leaves are entire, and the branchlets carry rather large panicles of white flowers resembling those of a myrtle. These are succeeded by irregularly-shaped red fruits as large as a nut. The timber, although small, is of great value for many purposes requiring great strength and durability; it is straight in the grain, even, dense, and heavy; it is of a pale-brown colour, and when figured is valued by the cabinetmaker, but is most frequently used for piles, mooring-posts, fence-posts, &c. Its specific gravity varies from 0·618 to 0·943; its weight per cubic foot, 38·45lb. to 60lb.; its breaking-weight ranges from 135lb. to 225lb.

24. KOWHAI (*Sophora tetraptera*), Aiton; "Forest Flora," Plates 50, 51, 52. North Cape to Southland; Chatham Islands.

This elegant tree varies from 25ft. to 40ft. in height, with a trunk 1ft. to 3ft. in diameter; frequently it is a much-branched shrub 10ft. to 20ft. high, with several stems of no great thickness. Its light feathery foliage and showy yellow flowers, the appearance of which marks the near approach of spring, render it a favourite for ornamental planting. The leaves vary from ¼in. to 7in. in length, and consist of a row of oval or oblong leaflets arranged on each side of a common leaf-stalk with a terminal leaflet at the apex. It is one of the few deciduous trees in the colony, and the flowers appear in August and September, before the new leaves are developed; they are from 1in. to 1½in. in length, and are carried in pendulous racemes. The pod or tomentum is curiously constricted between the seeds, and has four narrow membranous winged margins. The wood is of a rich brown colour, compact and heavy, very strong, tough and elastic, extremely durable. It is used for piles, house-blocks, braces, bearings for shafts and machinery, agricultural implements, cabinet work, and ornamental purposes generally.

Its specific gravity is 0·667 to 1·037; its weight per cubic foot 41·57lb. to 64·66lb.; and its breaking-weight 170lb. to 275lb.

Class II.

25. RIMU, RED-PINE (*Dacrydium cupressinum*), Solander; "Forest Flora," Plates 18 to 22. North Cape to Stewart Island.

In the young state, under favourable circumstances, the rimu is one of the most charming trees known; its conical outline and long pendulous branchlets suggest the idea of a living fountain. In old specimens this symmetrical outline is completely lost; the arms spread irregularly, and carry the uneven drooping branchlets at the tips, so that the tree often presents a ragged, uneven appearance. It attains the height of from 40ft. to 80ft. with a trunk from 2ft. to 4ft. in diameter, clothed with rugged bark, which alone is sufficient to distinguish it from any other New Zealand pine. The leaves are awl-shaped, from $\frac{1}{12}$in. to ¼in. long, closely overlapping all round the branchlets, and very uniform in old trees.

The fruit is a nut, seated on a red fleshy receptacle, having a few green scales on its surface. Rimu is the chief building timber employed over two-thirds of the colony, and is used for framing, flooring, joists, weatherboards, mantelpieces, &c.

It is of a brown colour, varying greatly in intensity, but often beautifully shaded, resembling some varieties of rosewood, so that it is extensively used in the manufacture of plain and ornamental furniture, for which indeed it is especially suited.

Although not durable when exposed, it is of great strength, and may be used for beams under cover. In Taranaki, selected logs are sometimes employed in the construction of bridges, great care being taken to prevent the access of water at the joists; but its general use in exposed constructive works is certainly unwise, although occasionally the heart-wood of very old logs is so thoroughly saturated with resin that it may be used for railway-sleepers and other purposes where strength and durability is required.

Its specific gravity is 0·550 to 0·664, and its weight per cubic foot, when seasoned, is from 24·38lb. to 40·11lb. Its breaking-weight is 350·88lb., so that it is equal to English oak in strength. Rimu occupies a larger portion of the forest area than any other New Zealand timber.

26. KAHIKATEA, WHITE-PINE (*Podocarpus dacrydioides*), A. Richard; "Forest Flora," Plate 31. Mongonui to Southland.

A noble tree, 60ft. to 150ft. high, with a remarkable straight trunk, 2ft. to 4ft. and upwards in diameter. It often forms vast forests in swampy situations, but is also found on the hills. Old swamp specimens often develop fluted buttresses, but usually the trunk is remarkably symmetrical. In young trees the leaves are ¼in. long, spreading, and of a deep brown colour, arranged in a single row on each side of the branches. In the mature state they are reduced to small scales, about $\frac{1}{12}$in. long, closely appressed to the branchlets, which resemble those of a cypress. The fruit is a red drupe, the jet-black seed being partly exserted at the apex. The wood is white or pale-yellow, tough, elastic, and of great strength, but it is not of great durability when exposed, although often employed for general building purposes, especially for flooring. It is extensively used for cheap furniture, and is exported to a considerable extent. Unhappily it is often attacked by a small boring-beetle, the larvæ of which drive their miniature tunnels through it in all directions until at length it crumbles to pieces.

In the Marlborough and Nelson districts a variety of this plant, growing chiefly on the hills, produces timber of a yellow colour, which is considered to be much more durable than the ordinary kind.

The specific gravity of the seasoned timber is 0·459 to 0·557; its weight per cubic foot 29·11lb. to 29·505lb. A piece 2ft. long and 1in. square, supported at each end and loaded in the middle, requires a weight of from 308lb. to 358lb. to break it. Occasionally logs are met with having a much higher specific gravity.

27. MIRO, TOROMIRO (*Podocarpus ferruginea*), Don; "Forest Flora," Plate 84. Mongonui to Stewart Island.

A round-headed tree, much resembling the English yew, with a trunk from 50ft. to 90ft. high, and from 1ft. to 3ft. in diameter. When growing on hills at an altitude of from 1,500ft. to 2,000ft. the trunk is usually very short in proportion to the branches. The leaves are from ¼in. to ⅜in. long, acute at the tips with a distinct mid-rib, green on both surfaces; those of very young plants are rather longer than those of the mature state, but all alike become of a rusty brown when dried. The handsome solitary fruits are of a bright red colour, ⅜in. long and carried on short stalks. The timber resembles the matai, but is of a deeper brown, and may be easily distinguished in cross sections by the dark colour of the heart-wood, which is somewhat irregular in shape. It is clear and straight in the grain, of even texture, firm, elastic, and strong; but is not durable when exposed, and speedily decays if water is allowed to gain access to the joints. It is useful for all kinds of indoor work, and from its strength is specially suitable for beams under cover. On account of its hardness it is liable to split when nails

are driven without previous boring, and less easily worked than other kinds; it is, however, found to be of great value for marine piles, when the bearing joints are carefully protected.

Its mean specific gravity is 0·787; weight per cubic foot 49·07lb.; breaking-weight, 197·2lb.

It is most plentiful in the South Island, and forms a large portion of the forests of South and Stewart Islands. In Otago it was formerly known as bastard black-pine, a designation which has happily fallen into disuse.

28. TANEKAHA (*Phyllocladus trichomanoides*), Don; "Forest Flora," Plates 6, 7. Auckland, plentiful; rare in Hawke's Bay, Marlborough, and Nelson.

The tanekaha is one of the celery-topped pines, and is a strikingly handsome tree 50ft. to 80ft. in height, with smooth, dark-grey or blackish bark and spreading branches, which are often whorled. The fan-shaped expansions resembling leaves are modified organs termed phyllodia, and bear the female flowers on their margins; the true leaves are small and insignificant, speedily falling away. The wood is remarkably sound, straight in the grain, of firm and even texture, and is one of the strongest timbers in the colony, but not suitable for situations in which it becomes alternately wet and dry. It has been used for water-tanks with excellent results, for all kinds of inside work, and even for weatherboards. Notwithstanding its great strength it should never be used for bridges or constructive work of any kind. It is occasionally employed for the masts of small craft, and is largely used for mine-props on the Thames goldfield. The young plants, being straight and slender and having the branches given off in regular whorls, make excellent ornamental stocks for gig whips, &c., and are specially suitable for walking-sticks.

The bark is the most valuable in the colony for tanning purposes.

29. TOATOA (*Phyllocladus glauca*), Carr; "Forest Flora," Plates 98, 99. Mongonui to Te Aroha and Patetere.

"The most charming of all the New Zealand pines" is a handsome tree 25ft. to 40ft. high, with a trunk 12in. to 18in. in diameter; the large foliaceous phyllodia are sometimes 2in. long and 1½in. broad, somewhat fan-shaped. The male catkins are crowded at the tips of the branches, and the fruits are lateral, forming cones as large as hazel nuts. The wood is white, very straight in the grain, and splits easily. It is tough, strong, and elastic, but in all probability will not prove durable when exposed.

The bark is probably equal to that of the tanekaha for tanning purposes.

30. MOUNTAIN TOATOA (*Phyllocladus alpinus*), Hooker f.; "Forest Flora," Plate 100. Mountain districts from Cape Colville to Southland.

This species rarely exceeds 25ft. in height, and the trunk is usually 5in. to 12in. in diameter; the phyllodia are smaller and thicker than in the preceding species. The wood is similar to that of the tanekaha, being of equal strength. It is much valued by bushmen for levers, lifting-poles, &c. Tar is occasionally extracted from it, but it is of no value for general building purposes.

31. TAWHAI, or MOUNTAIN-BEECH (*Fagus cliffortioides*), Hooker f.; "Forest Flora," Plates 101, 101A. Waikare Moana to Preservation Inlet.

This is sometimes termed tawhai-rauriki by the Maoris, and mountain-birch, white-birch, &c., by shepherds and bushmen. It rarely exceeds from 40ft. to 50ft. in height, and when growing above 3,000ft. is reduced to 6ft. or 8ft. or dwarfed into a flat-topped bush. Isolated specimens are exceedingly beautiful and picturesque. The wood is of small dimensions, and although of considerable importance in the mountain districts, where it forms the only timber, does not enter into commerce.

32. TAWHAI, or SILVER-BEECH (*Fagus menziesii*), Hooker f.; "Forest Flora," Plate 89. Hauraki Gulf to Colac Bay, Southland.

The silver-beech is the most beautiful and attractive of all the New Zealand beeches; unhappily different common names have been applied to it in different

districts, so that it is variously termed brown-birch, red-birch, white-birch, silver-birch, &c. It is usually from 80ft. to 100ft. in height, with a trunk 2ft. to 4ft. in diameter. On immature trees the bark is thin, whitish, and silvery, but on old specimens it becomes rough and furrowed at the base. The leaves are smooth, somewhat rhomboid in shape, about ½in. long by ⅓in. wide, with blunt rounded teeth. The fruit is similar to that of the tooth-leaved beech, but the transverse plates on the valves are fringed with minute stalked glands.

The wood is of a deep-red colour, plain, remarkably straight and even in the grain, of great strength, but not durable when exposed. Although rather heavy, it is used for the framing of houses, except ground-plates, and for all kinds of indoor work, and for the manufacture of ordinary furniture; it is especially useful for tubs, buckets, and other coopers' ware, more particularly for wine and spirit casks. Its weight, when seasoned, is 38·99lb. per cubic foot, and its breaking-weight 185·50lb. It is valuable for large beams under cover.

33. PUKATEA (*Laurelia novæ-zealandiæ*), A. Cunningham; "Forest Flora," Plate 71. Mongonui to Westland.

A lofty tree with pale bark, usually from 90ft. to 120ft. or even 150ft. high, with a trunk from 3ft. to 6ft. in diameter, usually flanked with radiating buttresses at the base, which nearly double the diameter of the trunk. The glossy ovate or oblong leaves are ¾in. to 1½in. wide and barely twice as long. The wood is of a pale yellowish-brown colour, streaked or clouded with deeper shades, and often very ornamental, rather soft, but of great strength and toughness. It does not split, and as it is difficult of combustion would be valuable for flooring-boards for factories, &c. It has been employed in boat-building, and was formerly valued by the Maoris for canoes. It has been used for house-framing, except ground-plates and weather-boards. It is excellent for common furniture and for many kinds of ornamental work.

34. HINAU (*Elæocarpus dentatus*), Vahl; "Forest Flora," Plate 11. North Cape to Catlin's River.

The hinau forms a round-headed tree 40ft. to 60ft. high, with a rather short trunk 1ft. to 3ft. in diameter, clothed with grey bark. The branches are often naked except at the tips; the leaves are linear-oblong, 2in. to 3in. long, and the drooping white flowers are produced in racemes which spring from the naked wood or from the axils of the leaves, and present a most attractive appearance. The wood is of a dull brown, usually with darker or even black heart-wood. It splits easily, and is tough, strong, and of great durability. It is used for piles, sleepers, bridges, culverts, posts, rails, &c., but is worthless for firewood, as it burns with difficulty. Its bark is highly valued by the tanner.

35. POKAKA (*Elæocarpus hookerianus*), Raoul; "Forest Flora," Plates, 12, 13. North Cape to Stewart Island, but often rare and local.

The pokaka bears much resemblance to the hinau, but is of smaller dimensions; its usual height is about 50ft.; the trunk, 2ft. to 3ft. in diameter, is clothed with white bark. The leaves are shorter and narrower than the preceding species, and the flowers are smaller and less attractive. In the young state the branches are tortuous and interlaced with narrow linear or lobed leaves which bear no resemblance to those of the mature state. The timber is whitish, tough, and compact, but is not durable when exposed. The bark has been employed for tanning, but is inferior to that of the hinau.

36. TARAIRI (*Beilschmiedia tarairi*), Bentham and Hooker *f.*; "Forest Flora," Plate 43. North Cape to Lower Waikato and Poverty Bay.

The tarairi is a handsome tree 60ft. to 80ft. high, with stout branches and large broad ovate or obovate leaves of thick texture, brown above and white beneath. The fruit is similar to that of the tawa, but larger. The wood is white, but red at the heart, and splits with the greatest ease; it is, however, not durable when exposed. It is sparingly used as a substitute for the mangeao in the manufacture of ship's blocks and light carts, but is not sufficiently elastic for

this work. It is occasionally employed for the manufacture of cheap furniture; and, as it burns quickly, is largely used as a cheap firewood.

37. TAWA (*Beilschmiedia tawa*), Bentham and Hooker f.; "Forest Flora," Plate 126. Spirits Bay to Marlborough and Nelson.

In its slender twiggy branches and willow-like foliage the tawa differs widely from any other tree in the New Zealand forests. In some districts it is so plentiful that it constitutes fully two-thirds of the timber. It is from 40ft. to 80ft. high, with a trunk from 1ft. to 4ft. in diameter, clothed with black bark. The lanceolate leaves are from 2in. to 4in. long; the flowers are green and inconspicuous, but the handsome fruit resembles a damson, and is about the same size. The wood is white, firm, hard, even, and very straight in the grain, but becomes rather brittle with age. It is not durable when exposed. It is now much used for dairy-ware, buckets, tubs, pails, and especially for butter-casks, for which it is highly valued, and preferred to either kauri or sycamore. Spears from 30ft. to 36ft. long were made from the trunk by the Maoris. The wood is valued for firewood, as it burns with comparative ease when wet.

38. TITOKI, TOKITOKI (*Alectryon excelsum*), De Candolle; "Forest Flora," Plate 92. Mongonui to Westland.

The titoki, or New Zealand ash, as it is sometimes called, is a beautiful tree 40ft. to 60ft. high, with a trunk 1ft. to 3ft. in diameter; the leaves are from 5in. to 13in. long, and consist of from nine to fifteen stalked pointed leaflets on each side of a common leaf-stalk. The flowers are small, forming large reddish-brown panicles which are followed by the curious fruits. These are very handsome; the outer coat is hard and woody, with a ridge on the upper surface which is produced backwards into a short spur; the fruit-vessel becomes ruptured transversely and exhibits a glossy jet-black seed, imbedded in a bright scarlet granulated fleshy cup, forming a charming and harmonious contrast of colour. The wood is very straight in the grain, very even, and easily worked. It is highly valued for its great toughness, strength, and elasticity, but is not durable when exposed. It is used for bullock-yokes, swingle-trees, axe-handles, light framing for machinery, and especially for light spokes, hubs, felloes, panels, framing for light vehicles, and bent ware.

Its specific gravity varies from 0·904 to 0·929; its weight per cubic foot from 56·31lb. to 57·94lb.; and its breaking-weight from 246lb. to 250lb.

39. TAWARI (*Ixerba brexioides*), A Cunningham; "Forest Flora," Plate 48. Bay of Islands and Hokianga to northern part of Hawke's Bay.

The elegant foliage and striking flowers of the tawari render it one of the most beautiful trees in the colony. It is from 30ft. to 70ft. in height, with a trunk 1ft. to 2ft. in diameter. The leaves are narrower and lanceolate in shape, of a pale glossy-green, and the handsome flowers, which are from 1in. to 1½in. in diameter, are produced in terminal panicles. The wood is white, with a reddish-brown heart, but has been utilised only for mine-props and other temporary purposes.

40. MANGEAO, TANGEAO (*Litsea calicaris*), Bentham and Hooker f.; "Forest Flora," Plate 10. Mongonui to Rotorua.

A small tree, rarely exceeding 40ft. in height, with a trunk 1ft. to 2ft. in diameter. The leaves are ovate or oblong, 3in. to 4in. long; the cream-coloured flowers are produced in small umbels, which spring from the axils of the leaves. The wood is white, compact, strong, of great elasticity, and is suitable for any purpose requiring strength, toughness, and elasticity, with a light weight. It is valued for bullock-yokes, coopers' work, coach-panels, shafts, light felloes, and all kinds of bent ware. It is largely in demand for ships' blocks, for which purpose it is considered superior to English ash. It is not durable when in contact with the ground.

Its specific gravity is 0·621, and its weight 38·70lb. per cubic foot.

41. REWAREWA (*Knightia excelsa*), R. Brown; "Forest Flora," Plate 35. Mongonui to Marlborough.

This fine tree has much the habit of the Lombardy poplar, and is one of the most striking trees in the New Zealand forests, its strict ascending branches being unique among the arboreal flora. It attains the height of from 70ft. to 100ft., with a trunk 1½ft. to 3ft. in diameter, clothed with dull brown bark. The leaves are from 5in. to 8in. long, rigid, and obtuse, with coarse teeth. The deep-red flowers are arranged in dense cylindrical racemes 2in. in diameter, which spring from the naked bark or from the axils of the leaves. The timber splits easily, is straight in the grain, highly ornamental, handsomely mottled, and often clouded; it is of great strength, and very difficult of combustion. It is largely employed for ornamental cabinet work and turnery, and is valued for inlaying and writing-desks, also for ornamental fittings for steamers and houses. It is not durable when exposed, but has been used for shingles and similar purposes.

Its specific gravity is 0·785; weight per cubic foot 48·92lb.; the breaking weight of a piece 12in. long and 1in. square, fixed at one end and loaded at the other, is 161lb.

42. TAWHERO (*Weinmannia silvicola*), Banks and Solander; "Forest Flora," Plate 72. North Cape to northern part of Hawke's Bay.

This species attain its greatest development in situations at an altitude of from 1,500ft. to 3,000ft. At the sea-level it rarely exceeds 20ft. in height, but at 2,000ft. specimens 70ft. high and upwards, with trunks 1ft. to 3ft. in diameter, may be found. In all states it forms a handsome and attractive object when in full bloom. The leaves are extremely variable, sometimes 6in. long, with many pairs of ovate or lanceolate leaflets, at others consisting of three leaflets, or even of a single leaflet. The flowers are whitish, very small, and developed in profusion at the tips of the branchlets. The timber is of a light-red colour, very even, strong, tough, and elastic, but opinions differ as to its durability. It has been used for a variety of purposes, and makes excellent firewood; but the tree is more valued for its bark, which has been extensively used for tanning.

43. TOWHAI, OR KAMAHI (*Weinmannia racemosa*), Forster; "Forest Flora," Plate 73. Middle Waikato to Stewart Island.

This species is similar to the preceding, but of larger dimensions. Seedling plants exhibit compound leaves, but these speedily disappear, and the leaves of the mature state are simple, 1in. to 4in. long, ovate and coarsely toothed. The flowers are similar to those of *W. silvicola*, but the seed-pods are hairy. The wood is deeper in colour than that of the preceding form, strong and durable; in many cases it is prettily marked, and is suitable for cabinet-making and for ornamental turnery, &c. It is used for house-blocks, piles, fence-posts, tramway-sleepers, &c., and for railway-sleepers in moist situations. It is especially suited for beams under cover, but when exposed to the sun, longitudinal cracks develop and water gains access. It has been used for house-framing. Its weight per cubic foot, when seasoned, is 38·717lb., and its breaking weight 314·7lb. The bark is highly valued for tanning.

44. POROKAIWHIRI (*Hedycarya dentata*), Forster; "Forest Flora," Plate 110. Three Kings Islands to Port Chalmers.

A small tree, 30ft. to 50ft. high, with a trunk 1ft. to 2ft. in diameter, but often reduced to a short shrub, branched from the base. The leaves are from 2in. to 4in. long, and from 1in. to 2in. broad, quite entire; the flowers spring from the axils of the leaves, and are succeeded by the pale red fruits, which are produced in profusion, and present an attractive appearance. The wood is white, soft, and splits readily, but is not durable when exposed.

45. KOHEKOHE (*Dysoxylum spectabile*), Hooker f.; "Forest Flora," Plates 64, 65. Mongonui to Marlborough and Nelson.

A round-headed tree 20ft. to 50ft. high, with a trunk 1ft. to 4ft. in diameter, clothed with pale bark. The leaves are from 12in. to 18in. long, and

consist of about four pairs of large entire leaflets 3in. to 7in. long.; the flowers form drooping panicles 12in. long, springing from the naked bark or from the axils of the leaves; the fruit is a pendulous rounded capsule with thick leathery valves, and is usually three-celled, the seeds being enclosed in a scarlet envelope. The wood is even in the grain, soft and light, but fairly durable. It is used by the cabinetmaker, especially for work in which light timbers are required, and makes excellent firewood. It is greatly prized for wire-fence posts in loose sand; in situations of this kind it is more durable than totara. Its specific gravity is 0·678; its weight per cubic foot 42·25lb., and its breaking-weight 117·41b.

Class III.

46. Horopito (*Drimys axillaris*), Forster; "Forest Flora," Plate 1. North Cape to Stewart Island.

A shrub or small tree, sometimes 30ft. high; the trunk rarely exceeds 8in. in diameter, and is clothed with black bark. Leaves entire, of a glossy green, or, in the South, of a yellowish green with red blotches. Flowers, small; wood, reddish, with pale markings, chiefly used by the cabinetmaker for inlaying.

47. Tarata (*Pittosporum eugenioides*), A. Cunningham; "Forest Flora," Plate 49. North Cape to Southland.

A round-headed tree 20ft. to 40ft. high, clothed with white resinous bark. Its leaves are of a delicate pale green, 2in. to 4in. long, and upwards of 1in. wide. The flowers are pale yellow, produced in rather large corymbs at the tips of the branches. The wood is white and compact, tough, elastic, and strong, but not durable when exposed. It is largely used by the wood-turner, and is suitable for chisel-handles, &c. It is extremely difficult of combustion. It is called by the settlers white mapau, turpentine maple, &c.

48. Karo (*Pittosporum crassifolium*), Banks and Solander; "Forest Flora," Plate 14. North Cape to Poverty Bay.

A tall shrub or small tree, 30ft. high, with a rigid habit of growth. Leaves, 2in. to 3in. long, entire, whitish beneath, with chocolate-coloured flowers and decurved capsules, the size of small walnuts. The wood is white, tough, strong, and difficult of combustion. It is occasionally used for inlaying.

49. Tawhiwhi (*Pittosporum tenuifolium*), Banks and Solander; "Forest Flora," Plate 46. North Cape to Stewart Island.

A shrub or small twiggy round-headed tree 30ft. to 40ft. high; trunk, 12in. to 18in. in diameter, clothed with smooth, black leaves; leaves, 1in. to 1½in. long; flowers, chocolate-coloured, springing from the axils of the leaves. Fruit, an erect woody capsule as long as a hazel nut. Wood, brownish-white, even in the grain, tough, elastic, and very strong, but not durable when exposed. Its specific gravity is 0·959 to 0·972, and its weight per cubic foot 59·79lb. to 60·57lb. Its breaking-weight is 243lb. for a piece 12in. long, 1in. by 1in., supported at one end and weighted at the other.

50. Mahoe (*Melicytus ramiflorus*), Forster; "Forest Flora," Plate 3. Kermadec Islands to the Bluff.

A shrub or small tree, 25ft. to 30ft. high, with pale bark and inconspicuous greenish flowers; leaves 3in. to 5in. long; fruit a small rounded berry. The leaves are eaten by stock. The wood is of a pale brown colour, and very brittle; it is occasionally used for inlaying, and is valued for charcoal for the manufacture of gunpowder. It is largely used for firewood.

51. Houi or Manatu (*Plagianthus betulinus*), A. Cunningham; "Forest Flora," Plates 103, 104. Mongonui to Stewart Island; Chatham Islands.

The ribbon-wood, as it is termed by the settlers, is a graceful tree, closely resembling the European birch in habit; it is from 30ft. to 60ft. in height, with a trunk from 1ft. to 3ft. in diameter. The leaves are from 1in. to 3in. long,

deeply toothed or lobed. The flowers are small and crowded in panicles at the tips of the branches. The wood is white and of even grain; it splits easily, but is not durable when exposed; it is specially suited for "white-wood furniture." When prettily marked it is valued by the inlayer.

52. WHARANGI (*Melicope ternata*), Forster; "Forest Flora," Plate 66. Kermadec Islands; North Cape to Marlborough and Nelson.

A shrub or small tree, rarely exceeding 20ft. in height, with pale-yellow leaves, consisting of three leaflets dotted with oil-glands. The wood has a pale satiny lustre, and is used for inlaying, &c.

53. KAIKOMAKO (*Pennantia corymbosa*), Forster; "Forest Flora," Plate 78. Mongonui to Otago.

A shrub or tree, 40ft. high; the leaves are broadly oblong and irregularly-toothed or lobed; the fragrant white flowers are produced in panicles at the tips of the branches, and are followed by the shining black fruits. The wood is strong, compact in the grain, and durable. It is often prettily marked, and is then utilised by the cabinetmaker and the wood-turner. It is one of the woods used by the Maoris to obtain fire by friction.

54. AKE (*Dodonæa viscosa*), Linné; "Forest Flora," Plate 17. North Cape to Banks Peninsula; Chatham Islands.

A shrub or small tree, sometimes 30ft. high, but usually smaller, trunk rarely exceeding 1ft. in diameter; bark reddish-brown, falling away in narrow flakes; the leaves are quite entire and broadest at the apex, the flattened fruits with broad membranous wings are very conspicuous. The wood is remarkably dense and heavy, blackish or dark-brown, variegated with streaks or patches of white; of great strength and durability. It is valued for picture-frames, cabinet work, inlaying, machine bearings, and was formerly used for clubs and other weapons.

55. KARAKA (*Corynocarpus lævigata*), Forster; "Forest Flora," Plate 88. Kermadec and Chatham Islands; North Cape to Banks Peninsula.

A noble evergreen tree, 30ft. to 50ft. high, trunk 1ft. to 3ft. in diameter; leaves 3in. to 7in. long, 2in. to 3in. broad; flowers, greenish white, in panicles at the tips of the branches, followed by deep-orange fruits. The wood is white, and splits easily, but is perishable. As it is the largest tree in the Chatham Islands the Morioris have utilised it for canoes. The kernel of the fruit is poisonous in the raw state, but when properly cooked is considered highly nutritious by the Maoris.

56. PUTAPUTA-WETA (*Carpodetus serratus*), Forster; "Forest Flora," Plate 47. Mongonui to Stewart Island.

A shrub or small tree, rarely exceeding 30ft. in height, with branches spreading in a fan-shaped manner; the leaves are entire, and sharply toothed, ¾in. to 1½in. long; the white flowers are arranged in broad clusters, developed in the axils of the leaves. The wood is white, tough, strong, and elastic, not unfrequently it is prettily marked, but lacks durability when exposed. It is used for axe-handles and similar purposes.

Its mean specific gravity is 0·822; its weight per cubic foot 51·24lb.; and its breaking-weight 177·6lb.

57. KUMARAHOU (*Quintinia serrata*), A. Cunningham; "Forest Flora," Plate 125. Mongonui to Jackson's Bay.

The New Zealand lilac, as it is often termed, is a shrub or small tree 40ft. high, with a trunk 1ft. to 2ft. in diameter; the leaves are 2in. to 6in. long and ¾in. to 2in. wide, quite entire; the deep-lilac-coloured flowers are arranged in erect racemes 1in. to 4in. long, springing from the axils of the leaves. The wood is of a light-red colour, often prettily marked and figured, tough, strong, and elastic, but not durable when in contact with the ground. It is used by the

cabinetmaker, and, in the absence of better timber, might be employed for inside work.

58. MAKAMAKA (*Ackama rosæfolia*), A. Cunningham; "Forest Flora," Plate 63. Mongonui and Hokianga to Whangarei.

A handsome shrub or tree, 20ft. to 50ft. high, with trunk 1ft. to 2ft. in diameter; the leaves are from 3in. to 10in. long, and consist of from three to ten pairs oblong leaflets, with toothed margins; the flowers are arranged in lax panicles. The wood is of a brownish-red colour, and similar to that of *Weinmannia silvicola*. The bark is used for tanning.

59. MANUKA, or KAHIKATOA (*Leptospermum scoparium*), Forster; "Forest Flora," Plate 117. North Cape to Stewart Island.

This is the most abundant scrub in the colony, in some localities covering thousands of acres, sometimes only 3ft. to 4ft. high, frequently forming a kind of spinny with straight stems 10ft. to 15ft. high, 3in. to 5in. diameter, and more rarely a small tree 20ft. to 30ft. high, with a trunk 1ft. to 2ft. diameter. The leaves and flowers are larger than those of the manuka-rauriki (No. 22), and the wood is similar, but of a deeper colour and inferior in strength. An infusion of the leaves is often used by bushmen as a substitute for tea.

60. RAMARAMA (*Myrtus bullata*), Banks and Solander; "Forest Flora," Plate 131. Mongonui to Marlborough.

This small myrtle is a shrub or small tree 30ft. high; its reddish-brown ovate leaves are characterized by the spaces between the veins being tumid or inflated, as if blistered—a peculiarity which distinguishes it from all other native plants; its charming white flowers are developed from the axils of the leaves. The wood is red, and often prettily figured; it is straight, compact, and of considerable strength. It is used for ornamental cabinet-work and inlaying, as well as for the handles of chisels, axes, &c.; and makes excellent firewood.

61. SMALL-LEAVED RAMARAMA (*Myrtus ralphii*), Hooker f.; "Forest Flora," Plate 94. Auckland to Nelson.

A shrub or small tree, sometimes 20ft. high, and resembling *M. bullata*, but with smaller and less tumid leaves. The wood is prettily streaked and mottled, and is applied to the same purposes as the preceding.

62. ROHUTU (*Myrtus obcordata*), Hooker f.; "Forest Flora," Plate 70. Hauraki Gulf to Otago.

A shrub or small tree, rarely exceeding 15ft. in height. The leaves are about ½in. long, broadest at the apex, where they are indented by a shallow notch; the white flowers are developed in the axils of the leaves. The wood, although small, is of great strength, tough, and elastic: it is often prettily marked, and is used for all kinds of ornamental work, turnery, &c., as well as for the handles of carpenters' tools.

63. ROHUTU (*Myrtus pedunculata*), Hooker f.; "Forest Flora," Plate 112. Mongonui to Stewart Island.

This is the most common of the native myrtles, and attains the height of 20ft. under favourable conditions. It resembles the preceding species; but the leaves are rounded at the apex, and destitute of the notch. The wood is applied to the same uses.

64. KOTUKUTUKU or KOHUTUHUTU (*Fuchsia excorticata*), Linné f.; "Forest Flora," Plate 36. North Cape to Stewart Island.

The large native fuchsia varies from a shrub to a tree 45ft. high, with a trunk 1ft. to 3ft. in diameter, clothed with thin, reddish-brown bark, which, in old specimens, divide into numerous paper-like layers. The pointed leaves are very soft, white beneath, and from 2in. to 4in. long; the flowers are solitary,

pendulous, at first greenish, streaked or blotched with deep purple, passing into a dull red. As the trunk is often gnarled and curved, it is difficult to obtain timber of great length; but with this drawback it is one of the strongest and most durable timbers in the colony. It is difficult of combustion, hard, dense, and heavy. In many instances the deep-brown colour which forms the ground is relieved with broad streaks of a paler shade, and narrow waved black markings, which render it highly ornamental. It is used for house-blocks and fencing-posts, which seem almost indestructible either by the lapse of time or the ravages of fire. After a forest has been destroyed by fire, fencing-posts of this wood have been found uninjured, not even charred. It is highly prized for ornamental work, picture-frames, turnery, inlaying, &c., and contains 5·3 per cent. of tannin.

65. Horoeka (*Pseudopanax crassifolium*), Seeman; "Forest Flora," Plates 38A to 38D. Mongonui to Stewart Island.

The "lancewood" of the settlers exhibits remarkably diverse forms of foliage at different stages of its existence; but space does not allow of a detailed description being given here. In young plants, 3ft. to 15ft. high, the stems are unbranched, and the leaves are entire, slightly toothed and excessively rigid, from 1ft. to 3ft. long or more, but only ½in. broad; they are invariably deflexed, the lower surface forming a very acute angle with the stem, so that the tips of the leaves are nearest the ground. In the next stage the leaves are erect, compound, and consist of three or five leaflets springing from the apex of an erect leafstalk; but in the mature state these are superseded by simple entire and toothed erect rigid leaves on very short leafstalks. The flowers are produced in umbels, springing from the tips of the branches, and are followed by the black fruits. In the southern parts of the colony the stage with compound leaves is not developed.

In the mature state the horocka forms a round-headed tree, with a trunk 12in. to 18in. in diameter, and affords a dense compact timber of great strength, but of moderate durability. It has been used for small piles, struts, fencing-posts, sleepers, &c., with good results.

66. Toothed Lancewood (*Pseudopanax ferox*), T. Kirk; "Forest Flora," Plates 24 to 26. Whangaroa North to Dunedin. Rare and local.

This is closely related to the preceding species, but is of smaller dimensions, seldom exceeding 40ft. in height; it exhibits the same curious deflexed leaves up to 16ft. in height, but never produces compound leaves. The deflexed leaves are excessively rigid and acutely toothed or lobed, so as to be capable of inflicting a serious wound if incautiously handled; the mature leaves are shorter than those of the preceding species, but thicker, narrower, and more rigid, while the flowering panicles are smaller. The wood is similar to the preceding, but of a deeper colour, and has been applied to the same purposes.

67. Papauma (*Griselinia littoralis*), Raoul; "Forest Flora," Plate 42. Cape Colville Peninsula to Stewart Island.

A handsome spreading tree, 40ft. to 60ft. high, often with a gnarled and crooked trunk 2ft. to 4ft. in diameter, clothed with furrowed brown bark. The yellowish-green leaves are slightly wedge-shaped at base, and from 1in. to 3in. long; the flowers are arranged in small panicles, which spring from the axils of the leaves. The timber is dense, hard, of even grain, and slightly brittle; it splits easily, notwithstanding its distorted habit, and is of extreme durability. It is used for fencing-posts, boat-timber, sleepers, and other purposes for which small rigid timber of great durability is required.

68. Puka (*Griselinia lucida*), Forster; "Forest Flora," Plate 41. North Cape to Nelson.

A shrub or small tree, sometimes 30ft. high, and 1ft. to 2ft. in diameter; very similar to the papauma, but the leaves are 4in. to 6in. long, and very glossy, and the panicles also are much larger. The wood is similar to the preceding species, and is applied to the same purposes, so far as its smaller dimensions will allow.

69. Tree Karamu (*Coprosma arborea*), T. Kirk; "Forest Flora," Plate 132. Mongonui to Lower Waikato.

A small round-headed tree, 20ft. to 30ft. high, with a trunk 6in. to 16in. in diameter; the leaves are of a brownish-green tint, about 2in. long, often purple or reddish beneath; the flowers are inconspicuous; the fruits at first white and translucent, ultimately black. The wood is yellow, straight-grained, compact, and very tough, but not durable when in contact with the ground. It is utilised for ornamental cabinet-work and inlaying.

70. Yellow-wood (*Coprosma linariifolia*), Hooker f.; "Forest Flora," Plate 95. Thames Valley to Southland.

A shrub or small tree, sometimes 25ft. high. The narrow linear-pointed leaves are about an inch in length; the flowers are inconspicuous; the fruit is a two-seeded berry, at first translucent, ultimately black. The wood is of a deep yellow colour, compact, and tough; it is valued by the cabinetmaker for ornamental work, especially for inlaying.

71. Tupari (*Olearia colensoi*), Hooker f.; "Forest Flora," Plate 102. East Cape to Stewart Island.

A bushy shrub or small tree, sometimes 40ft. high, with trunk 2ft. in diameter. The broadly oblong leaves are from 3in. to 8in. long, and from 2in. to 3in. broad, of thick texture, glossy above but white beneath, with toothed margins. The flower-heads are carried in erect racemes at the tips of the branches. The wood is firm, compact, and strong, with a satiny lustre and small silver grain, often streaked or clouded. It is suitable for many kinds of ornamental work.

72. Akeake (*Olearia traversii*), Hooker f.; "Forest Flora," Plate 34. Chatham Islands.

A small tree 25ft. to 35ft. high, with a trunk sometimes exceeding 3ft. in diameter at the base. The branchlets and underside of the entire leaves are white; it is the only large-leaved species with opposite leaves in the flora. The wood is of a dark-brown colour, dense, heavy, and compact, with a satiny lustre, and often beautifully mottled. It is of great strength and extreme durability. Except the kowhai, it affords the only durable timber on the Chatham Islands, where it is extensively used for fencing-posts, sleepers, &c., and is shipped to the mainland for ornamental cabinet-work and inlaying.

73. Heketara (*Olearia cunninghamii*), Hooker f.; "Forest Flora," Plate 114. North Cape to Nelson.

A shrub or small tree, sometimes 25ft. high, with a trunk 1ft. in diameter or more. The ovate leaves are 2in. to 5in. long, and from 1in. to 2½in. broad, sparingly toothed. The small daisy-like flowers are produced in large panicles near the tips of the branches. The wood is light-coloured, compact, and satiny, with handsome silver grain and small figure. It is used for ornamental cabinet-work.

74. Akeake (*Olearia avicinniæfolia*), Hooker f.; "Forest Flora," Plate 111. Nelson to Stewart Island.

A shrub or small tree rarely exceeding 20ft. in height, with entire leaves 1½in. to 2in. long, and 1in. to 2in. wide, white beneath; flower-heads small, arranged in large panicles springing from the axils of the leaves. The wood is similar to that of the heketara, but more ornamental.

75. Neinei (*Dracophyllum latifolium*), Hooker f.; "Forest Flora," Plate 123. Auckland to Westland.

A small tree of singular beauty and striking habit, 10ft. to 25ft. high, trunk rarely more than 1ft. in diameter, with brown fibrous bark and distantly whorled branches, bearing at their tips a large cluster of recurved leaves, sometimes 1½ft. to 2ft. long and 1in. to 2in. broad at the base, tapering into long narrow drooping

or rigid points. The red flowers are very small, crowded into a cylindrical much-branched panicle 6in. to 18in. long, springing from the apex of the branch. The wood is of a reddish colour, even and compact, prettily figured and often waved or clouded; it is rather brittle, but extremely durable, and is suitable for all kinds of ornamental work.

76. MOUNTAIN NEINEI (*Dracophyllum traversii*), Hooker f.; Mountain passes, chiefly in the Canterbury District.

Similar to the preceding species, but larger in all its parts except the flowers, which are smaller; the trunk often exceeds 2ft. in diameter, and the crowded branches are more numerous. The wood is similar to the preceding but of a paler colour and satiny lustre, also of greater strength and durability.

77. INAKA (*Dracophyllum longifolium*), R. Brown; "Forest Flora," Plate 109. Tararua Mountains to Southland; Stewart Island; Auckland and Campbell Islands.

A shrub or tree, sometimes 30ft. high, of singular habit; the strict erect grass-like leaves are from 3in. to 10in. long, and confined to the upper parts of the branches, so that the plant presents a tufted appearance; the white flowers are arranged in dense racemes springing from the base of the tufts of leaves. The wood is of a whitish-brown hue, with a satiny lustre and oblique wavy markings, which render it very ornamental; it is somewhat brittle, but of great durability, and takes a high finish, which renders it valuable for all kinds of ornamental work, turnery, and inlaying.

78. TORO (*Myrsine salicina*), Heward; "Forest Flora," Plate 15. North Cape to Awatere and Westland.

A handsome tree, 30ft. to 40ft. high, with trunk 1ft. to 2ft. in diameter; branchlets leafy near the tips only; leaves 4in. to 6in. long, ½in. broad, narrow, oblong. Flowers arranged in small fascicles, springing from the naked bark, and followed by the red fruits, which are nearly ½in. long. The timber is of a deep red colour and beautifully marked, but is not durable when exposed. It is suitable for rafters, small beams, and all kinds of inside work, also for ornamental cabinet-work and turnery, veneers, &c.

79. MAPAU (*Myrsine australis*), A. de Candolle; "Forest Flora," Plate 16. North Cape to Stewart Island.

The mapau is also called matipau and tipau; it is an erect shrub or small tree 12ft. to 20ft. high, with leaves about 1½in. long, of a pale reddish brown; the small white flowers are produced in great abundance. The wood resembles that of the preceding species, but is of a paler colour, and, although of smaller dimensions, is more generally used for ornamental work. Both species afford excellent firewood.

80. TAWAAPOU (*Sideroxylon costatum*), Bentham and Hooker f.; "Forest Flora," Plate 133. North Cape to the East Cape; in places near the sea.

A handsome tree, 20ft. to 60ft. high, with a trunk 1ft. to 3ft. in diameter; the branchlets and leafstalks contain a milky juice; the oblong leaves are from 2in. to 3in. long, 1in. to 2in. broad, entire; the flowers are inconspicuous, but the handsome fruit resembles a small plum, and contains two or three polished bony seeds, which were formerly used as necklaces by the chiefs. The wood is white, with a fine compact wavy grain; although very tough it is easily worked, and takes a fine finish, but is not durable when exposed.

81. MAIRE (*Fusanus cunninghamii*), Bentham and Hooker f.; "Forest Flora," Plates 75, 76. Mongonui to Cape Palliser.

A small tree rarely exceeding 25ft. in height. The glossy leaves vary from narrow linear to broadly ovate, the extreme forms being sometimes found on the same branch; 1in. to 4in. long, ½in. to 1½in. broad. Flowers of a lurid purplish green; fruit red, as large as a cherry. From the agreeable odour of the wood it

is often termed New Zealand sandal-wood. When sawn it is of a deep brown colour, with dark streaks and markings: it is of even compact grain, dense, heavy, very strong and durable. It is often used for fencing purposes on account of its strength and durability, but is more highly valued for ornamental cabinet-work, turnery, and inlaying.

82. NGAIO (*Myoporum lætum*), Banks and Solander; "Forest Flora," Plate 124. Kermadec Islands to Otago.

A shrub or small tree, sometimes upwards of 30ft. high, with a trunk 1ft. or more in diameter; leaves 1 in. to 4in. long, ½in. to 1½in. broad, thickly dotted with pellucid glands; the white flowers form small clusters in the axils of the leaves. The wood is of a deep-brown colour with black streaks, which often form an irregular figure; it is dense, hard, and durable; it is used for fencing and other rustic purposes, also for ornamental cabinet-work and inlaying.

83. TORU (*Persoonia toro*), A. Cunningham; "Forest Flora," Plate 74. Mongonui to Rotorua.

The toru rarely exceeds 50ft. in height, with a trunk 1ft. to 2ft. in diameter, and is often reduced to a shrub, branched from the base; the leaves are very ornamental, 4in. to 8in. long and ½in. broad; the flowers are about ½in. long, and spring from the axils of the leaves. The wood is of a deep-red colour and beautifully marked, but rather brittle, and not durable when exposed. It is valued for ornamental cabinet-work, and especially for inlaying.

84. MILK-TREE (*Paratrophis microphyllus*), Bentham and Hooker f. North Cape to Otago.

A shrub or small tree, sometimes 30ft. high, with trunk 1ft. to 2ft. in diameter, clothed with smooth pale bark, which exudes a copious milky juice; the leaves are ½in. to 1in. long, and the flowers are inconspicuous. The wood is white, compact, and even in the grain, but rather soft and not durable.

85. MAKOMAKO (*Aristotelia racemosa*), Hooker f.; "Forest Flora," Plate 113. North Cape to Stewart Island.

The "wineberry," as it is commonly termed, is one of the most frequent plants in the colony, forming a shrub or tree 10ft. to 30ft. high, with distant slender branchlets clothed with red bark; the broadly-ovate pointed leaves are sharply toothed and almost membranous; the rosy flowers are produced in vast abundance in the early spring, and render the tree most attractive. The wood is white, straight in the grain, and often prettily figured, it is very light and of small durability, but is highly valued for the manufacture of charcoal for certain kinds of gunpowder.

86. TUMATUKURU (*Discaria toumatou*), Raoul; "Forest Flora," Plate 136. Port Waikato to Southland.

Usually a low shrub, but in mountain valleys attains the dignity of a small tree 20ft. high, and is easily recognised by the stout rigid spines, which were formerly used for tattooing. The wood is strong, tough, and durable; before roads were generally opened in mountain districts it was often converted for building purposes, and was greatly valued.

NATIVE BARKS SUITABLE FOR TANNING.

1. TANEKAHA (*Phyllocladus trichomanoides*), Don. The bark contains 23 to 28 per cent. of tannin, which possesses special value as an organic mordant in the preparation of basils for kid gloves. It has realised from £30 to £50 per ton in London for this purpose, but is used chiefly in France. The tree is plentiful north of the Waikato. There can be little doubt that the phyllodia, if collected in the spring, would be of considerable value for tanning purposes, and in all probability the bark and phyllodia of *P. glauca* and *P. alpina* would answer the same purpose.

2. TAWHERO (*Weinmannia silvicola*), Banks and Solander.

3. TOWHAI (*W. racemosa*), Forster. The bark of these fine trees contains from 10 to 13 per cent. of tannin, and could be obtained in vast quantities, especially in the South Island.

4. HINAU (*Elæocarpus dentatus*), Vahl. This is of still higher value, as the bark contains 16 per cent. of tannin.

5. POKAKA (*Elæocarpus hookerianus*), Raoul. The bark contains 10 per cent. of tannin.

6. MAIRE TAWHAKE (*Eugenia maire*), A. Cunningham. The bark yields 16·7 per cent. of tannin. The tree is almost restricted to the North Island.

7. RATA (*Metrosideros robusta*), A. Cunningham. The bark contains 18·5 per cent. of tannin, and can be obtained in large quantities.

8. TOOTH-LEAVED BEECH (*Fagus fusca*), Hooker f. The bark affords 7·6 per cent. of tannin.

9. RIMU (*Dacrydium cupressinum*), Solander. The bark contains 4·3 per cent. of tannin, and could be obtained in vast quantities at small cost by stripping the log before sawing.

10. KOHUTUHUTU or KOTUKUTUKU (*Fuschsia excorticata*), Linné. The wood of this common tree contains 5·3 per cent. of tannin, but in all probability a larger yield could be extracted from the leaves and young shoots.

11. TUTU (*Coriaria ruscifolia*), Linné. The bark of this common shrub affords 16·8 per cent. of tannin, but is rather slim. There is, however, good reason to believe that a profitable extract could be obtained from the stout spring shoots and leaves.

KAURI RESIN.

By Professor T. KIRK, F.L.S.

ALTHOUGH a true resin, this is usually miscalled kauri-gum. It is the solidified turpentine of the kauri, and occurs in great abundance in a fossil condition in the northern part of the Auckland Provincial District, from the North Cape to Middle Waikato, and is dug up alike on the driest fernhills and the deepest swamps. The purest samples are found on the Cape Colville Peninsula. A large quantity is also obtained from the forks of living trees, but is considered of inferior quality and fetches a lower price. At the present time gum-digging employs nearly or quite 7,000 persons, including Maoris and aliens.

In the fossil state kauri resin occurs in larger or smaller lumps, from the size of a walnut to that of a man's head. Pieces have been found weighing upwards of 100lb. When scraped the best specimens are of a rich brown colour, varying greatly in depth of tint. Sometimes translucent or even transparent specimens are found, occasionally with leaves, seeds, or small insects enclosed. When obtained from swamps the resin is very dark coloured, or even almost black, and fetches a low price. Waikato resin is the darkest of all. Transparent or semi-transparent specimens fetch very high prices, being used as a substitute for amber in the manufacture of mouthpieces for cigar-holders, pipes, &c. The great bulk is used in the manufacture of oil varnishes, and in all countries where much varnish is made it holds the chief place in the market. It is

exported chiefly to England and the United States of North America. In 1860 the export was only 1,046 tons, valued at £9 per ton; in 1895 it amounted to 7,425 tons, valued at £56 8s. per ton. The following statement, taken from the Customs returns, shows the quantity exported in each year from 1884 to 1895, with the total value and average per ton :—

Year.	Quantity. Tons.	Total Value. £	Average per Ton. £ s. d.
1884	6,393	342,151	53 10 4
1885	5,875¾	299,762	51 0 3
1886	4,920¾	257,653	52 7 1
1887	6,790	362,434	53 7 6
1888	8,482	380,933	44 18 0
1889	7,519	329,590	43 16 8
1890	7,438	378,563	50 17 11
1891	8,388	437,056	52 2 1
1892	8,705	517,678	59 9 4
1893	8,317	510,775	61 8 3
1894	8,338	404,567	48 10 5
1895	7,425	418,766	56 8 0

The digger's equipment is of a simple character: a gum spear, that is, a light pointed iron rod fixed in a convenient handle, is used to test the ground; the gum is then dug out with a spade and carried home in a sack. In many cases the spear is dispensed with, and the entire area is dug over to such depth as the digger thinks likely to prove profitable. An old knife is used to scrape the gum, the scrapings being utilised in the manufacture of fire-kindlers.

Diggers are supposed to pay a license of 5s. per annum for permission to dig on Crown land, but this does not restrict them to any one spot; 10s. is charged for permission to dig in State forest reserves during the winter months only. Persons digging on private lands usually pay a license-fee of from £1 to £4 per annum, and are required to sell the resin to the owner or lessee of the field at a fair market price. In many cases the fee is not exacted; in others, a royalty of £1 per ton is charged. The total area of the gumfields is variously estimated at from 1,500,000 to 1,800,000 acres.

The number of persons now obtaining their living by gum-digging is not far short of 7,000, making all proper allowances for settlers who dig only during a small portion of the year, and for Maoris and children. A Commission appointed in 1893 to inquire into the state of the industry, gives the number of persons on the gumfields in May of that year as under: British, 4,303; settlers, 416; Maoris, 1,244; Austrians, 519; other foreigners, 415: total, 6,897.

The Commissioners remark: "The numerical totals of Maoris and settlers are greater than those above given, but they have been reduced to what we believe to be their equivalent in able-bodied men working full-time. These classes only work during half the year, and, in the case of the Maoris, women and children preponderate. We have reduced the number of settlers to one-half, and the Maoris to two-fifths." Gum-digging is a standing resource for the industrious unemployed, and has enabled Auckland to tide over periods of

serious commercial depression with comparatively little difficulty. It has also been of vast benefit to hundreds of settlers with but small capital; not a few, who have attained a large measure of prosperity, look back gratefully to the help afforded by casual work on the gum-fields.

In the Commissioners' report it is stated that the average earnings of the digger on leased or private land are £1 7s. per week, while the actual cost of living is from 10s. to 12s. As the digger has no difficulty in constructing a weatherproof hut, he is not called upon to pay house-rent; his firewood also is obtained free of cost, so that he clears from 15s. to 17s. per week above the cost of living. As a matter of fact, the industrious digger is in a more favourable position than the figures just given indicate, since the average earnings are unduly lowered by the presence of a number of old people, who have taken to the work, as well as of others who are content to live from hand to mouth and do as little hard work as possible. To men of a roving disposition, the free independent life has great attractions, and when coupled with the certainty of earning sufficient for a livelihood, there is little cause for wonder that so many prefer it to the somewhat monotonous existence of the ordinary settler. It would be difficult to name any other product which can be so easily obtained in such remunerative quantities without any previous outlay.

SECTION III.

CLIMATE, TEMPERATURE, AND RAINFA

By Sir JAMES HECTOR, K.C.M.G., M.D., F.R.S.

METEOROLOGICAL OBSERVATIONS.

METEOROLOGICAL observations have been taken eve founding of the colony, though at first they were of a character, and made only with the view of comparing of New Zealand with that of other countries. From 18 logical reports appear regularly appended to the Registr statistics; but it was not until 1859 that systematic were undertaken by a Government department. In th stations, equipped with carefully-compared instruments blished at Mongonui, Auckland, Napier, New Plyr Wellington, in the North Island; Nelson, Christchurc and Invercargill, in the South Island; and some yea more were added—one at Hokitika and the other at the

Subsequently, several new stations were established all fifteen, from which monthly returns were sent to th in Wellington. Since then the number of chief statio reduced to nine, including one at the Chatham Islan number of secondary stations at which rainfall and recorded has been increased to 115.

TEMPERATURE.

In this respect the climate resembles that of Great is more equable, the extremes of daily temperature varyi out the year by an average of 20° only. London is 7° the North and 4° colder than the South Island of Ne The mean annual temperature of the North Island is the South Island 52°, that of London and New York beir

The mean annual temperature of the different seas whole colony is: In spring, 55°; in summer, 63°; in au and in winter, 48°.

Nelson.	Christchurch.	Dunedin.
63·6	65·2	58·0
45·9	44·3	43·2
17·7	20·9	14·8

The average difference between the mean temperature of the warmest and coldest months in New Zealand is 17°; at Rome it is 27°; at Montpellier, 33°; at Milan, 38°; and in Jersey, 22°.

Meteorological observations were taken in 1895, at 9.30 a.m. daily, at nine different stations—namely, at Auckland, in the northern part of the North Island; at Te Aroha and Rotorua, in the hot-springs district; at New Plymouth on the extreme west, and at Wellington at the extreme south of the North Island; at Lincoln, in the Canterbury District, on the east coast, and at Hokitika on the west coast, both about midway in the South Island; at Dunedin, in the southern district of the South Island; and at the Chatham Islands. The differences between the several stations in situation—Auckland, New Plymouth, Wellington, Hokitika, and Dunedin being seaports, the other three inland towns,—in elevation, and in latitude, involve considerable differences of temperature.

The mean temperature of air in the shade for the year 1895, at each station, and the maximum and minimum temperature recorded are given:—

Station.	1895.			
	Mean Temp. in Shade.	Max. Temp. recorded.	Min. Temp. recorded.	Extreme Range.
	° Fahr.	° Fahr.	° Fahr.	° Fahr.
Auckland	58·5	85·0	37·0	48·0
Te Aroha	56·1	86·0	24·0	62·0
Rotorua	53·8	90·0	22·0	68·0
New Plymouth	56·7	85·0	27·0	58·0
Wellington	55·1	88·0	32·0	56·0
Lincoln (Canterbury)	52·7	98·4	26·0	72·4
Hokitika	53·6	84·5	25·5	59·0
Dunedin	50·2	94·0	28·0	66·0
Chatham Islands	51·7	74·0	31·0	43·0

It will be observed that, although the mean temperature for the year was highest at Auckland, the highest temperature reached was at Lincoln, in the South Island.

Comparison between Climate on East and West Coasts.

The climate on the west coast is more equable than on the east, the difference between the average summer and winter temperatures in the north-west portion of the North Island being nearly four degrees less than in the south-east, while, as between the corresponding portions of the South Island, the differences vary by some seven degrees. This is due to the action of cyclonic disturb-

ances of the atmosphere, the centres of which in most cases pass south of New Zealand in their eastward progress, thus causing westerly winds to impinge on the west coast. The extent of their influence can be better appreciated by comparing the annual fluctuations of temperature on the opposite sea-boards of the South Island. Thus, at Christchurch, on the east, the range of temperature is greater by seven degrees than at Hokitika, on the west.

The average temperatures ascertained are given below :—

COMPARATIVE TEMPERATURES OF NEW ZEALAND.

I.—GENERAL ABSTRACT.

Stations.	S. Lat.	Long. E. from Greenwich.	No. of Years of Observation.	Year.	Winter.	Spring.	Summer.	Autumn.	Difference of the Warmest and Coldest Months.	Averages of Yearly Extremes. Max.	Averages of Yearly Extremes. Min.	Yearly Fluctuation.
North Island.	° ′	° ′		° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.
Mongonui ...	35 1	173 28	10	59·90	53·06	58·28	66·56	61·52	15·12	89·10	31·82	57·28
Auckland ...	36 50	174 51	20	59·54	52·34	57·56	66·92	61·16	16·02	88·52	33·26	55·26
New Plymouth ...	39 4	174 5	14	57·56	50·90	55·94	64·58	58·82	15·66	86·90	30·02	56·88
Napier	39 29	176 55	10	57·56	49·10	57·74	66·20	57·02	19·26	90·00	32·10	57·90
Wellington ...	41 16	174 47	14	55·58	48·74	54·50	62·24	56·66	14·76	78·44	32·18	46·26
Wanganui ...	39 56	175 6	3	55·90	48·71	53·31	63·31	57·12	16·70	86·00	29·00	57·00
South Island.												
Nelson	41 16	173 19	11	54·86	46·58	54·50	62·78	55·76	17·10	82·04	27·32	54·72
Hokitika ...	42 42	170 59	10	52·34	45·50	51·62	59·18	53·06	14·76	74·12	28·22	45·90
Bealey* ...	43 2	171 31	9	46·76	37·40	46·04	54·86	48·56	18·18	78·08	12·38	65·70
Christchurch ...	43 32	172 39	12	52·88	43·52	53·24	61·52	53·60	18·72	88·16	25·16	63·00
Dunedin† ...	45 52	170 31	17	50·72	43·52	50·54	57·20	51·80	15·30	84·74	29·84	54·90
Invercargill ...	46 17	168 20	14	50·36	42·26	51·26	58·10	50·00	16·92	83·84	20·12	63·72
Queenstown‡ ...	45 2	165 39	3	51·01	40·01	50·92	64·02	52·31	21·25	84·60	23·21	61·39

II.—DAILY RANGE OF TEMPERATURE.

Difference of the Mean Daily Extremes.

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
North Island.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.	° Fah.
Mongonui ...	16·74	15·30	19·08	18·18	16·92	15·30	15·66	16·92	16·02	14·58	16·74	15·48	16·38
Auckland ...	19·80	20·88	19·80	19·08	16·92	15·30	15·48	16·74	15·84	16·56	18·00	18·90	17·82
New Plymouth	21·60	20·16	21·42	19·44	15·84	15·30	14·40	16·56	18·00	16·74	18·54	19·62	18·18
Napier ...	21·60	21·78	17·82	15·12	14·94	13·66	15·30	15·12	18·00	18·18	19·08	18·72	17·46
Wellington ...	13·50	12·42	12·42	11·70	11·16	10·62	10·62	11·52	11·88	12·24	13·50	13·32	12·06
South Island.													
Nelson ...	23·40	20·70	21·24	17·10	17·82	19·08	19·08	19·62	21·06	21·42	22·14	20·34	20·16
Hokitika ...	11·16	13·32	12·60	12·78	13·86	14·58	13·68	14·76	15·66	12·24	11·52	11·34	13·14
Christchurch ...	18·36	16·56	17·46	17·10	16·38	14·94	16·56	16·02	16·20	18·54	19·08	17·10	17·10
Dunedin ...	15·66	15·66	15·12	13·68	11·52	10·44	10·62	12·06	13·32	13·68	15·30	16·20	13·68
Invercargill ...	21·78	22·50	22·68	18·00	16·02	17·64	16·92	19·44	22·32	21·06	21·06	22·50	20·16

The next table shows the shade temperatures for each month in New Zealand and other British colonies. The figures given are the means of four years. (H signifies highest, and L lowest) :—

* Height above sea, 2,104ft. † Height above sea, 550ft. ‡ Height above sea, 1,070ft.

British Possessions (Stations and Height in Feet above Sea Level where known).	Jan.		Feb.		March.		April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Year.	
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.
New Zealand—	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.
Wellington (140)	78	45	78	47	76	44	70	43	66	38	62	34	59	33	62	34	65	37	69	41	74	33	75	44	78	33
Queensland—																										
Brisbane (130)	92	64	93	63	91	61	85	54	80	50	76	42	75	39	78	41	85	46	91	50	94	57	97	61	97	39
New South Wales—																										
Sydney (155)	92	59	89	58	84	59	79	51	72	48	67	44	63	39	70	42	77	45	88	48	87	54	94	57	94	39
Victoria—																										
Melbourne (91)	101	48	99	47	99	45	86	40	74	37	64	37	62	32	68	34	74	34	81	40	94	44	96	45	101	32
South Australia—																										
Adelaide (140)	108	49	106	50	100	48	89	45	78	40	67	38	65	36	74	39	79	41	86	41	96	45	101	48	108	36
Western Australia—																										
Perth (47)	107	50	102	53	98	52	96	57	81	40	70	38	70	37	73	38	80	42	83	42	93	48	100	51	107	37
Tasmania—																										
Hobart (160)	91	45	94	45	93	44	75	38	71	37	61	34	59	33	66	33	72	35	77	35	92	40	86	43	94	33
Natal—																										
Durban (150)	99	63	95	61	94	60	94	58	89	52	86	49	88	48	91	49	96	50	91	53	97	57	98	59	99	49
Cape Town—																										
Royal Observatory (37)	94	54	90	51	92	49	86	45	80	42	76	39	74	37	76	37	83	39	86	44	89	48	90	52	94	37
Hongkong—																										
Observatory (110)	73	47	78	46	77	49	84	58	89	68	91	73	91	74	91	74	92	70	90	66	82	55	79	49	91	46
Straits Settlements—																										
Singapore (30)	88	70	90	70	91	71	91	73	90	73	90	72	90	72	89	72	89	71	89	71	89	71	89	70	91	70
Mauritius—																										
Royal Alfred Observatory (179) ...	84	69	84	71	84	70	82	70	80	62	77	60	75	59	75	59	77	62	80	62	82	66	84	68	84	59
Canada—																										
Toronto (350)	47	-3	45	-3	51	6	71	22	78	31	86	44	88	46	89	47	82	41	71	27	56	13	45	-1	89	-3
Montreal (187)	45	-14	42	-13	44	0	69	24	81	32	87	43	88	50	86	50	81	39	70	27	59	11	43	-11	88	-13
St. John (N.B.) (116)	49	-7	46	-7	47	4	62	22	69	33	81	42	79	49	77	48	73	37	60	26	56	16	49	-3	81	-7
Halifax (122)	50	-1	46	-3	50	10	63	22	73	32	83	39	84	48	84	49	80	36	69	29	60	21	51	3	84	-3
Charlottetown, Prince Edward Island (38)	47	-6	43	-9	47	5	60	20	70	31	77	39	80	49	79	49	75	39	66	30	58	19	47	1	80	-9
Winnipeg, Manitoba (764) ...	34	-37	32	-37	49	-25	76	8	82	20	90	35	87	40	91	34	86	30	73	17	53	-16	39	-29	91	-37
Victoria, British Columbia (10) ...	51	14	55	22	60	30	67	20	73	38	76	39	79	43	76	44	71	38	64	35	55	30	51	23	79	14
St. John's, Newfoundland (125) ...	48	-6	50	-8	50	11	61	15	71	27	76	33	81	41	79	42	78	33	65	24	62	19	51	9	81	-8
Barbados—																										
Joes River (430)	81	67	81	67	83	69	84	70	84	71	85	72	84	70	85	70	85	71	85	71	84	70	83	69	85	67
Bahamas—																										
Military Hospital	77	63	79	68	79	67	84	69	89	72	88	73	89	78	89	73	87	75	86	77	82	70	77	67	89	63
Jamaica—																										
Kingston (60)	91	63	90	63	90	62	91	68	91	70	92	71	95	71	93	73	92	70	93	69	91	67	90	63	95	62
Trinidad (130)	86	67	87	68	88	69	88	70	89	70	86	71	86	71	86	70	89	70	88	70	87	70	85	69	89	67

Rainfall.

The rainfall varies much, both at the different stations and from year to year at the same station. The following shows the rainfall for the last four years at the chief stations, and for the last two years at three new stations:—

Station.	1892.		1893.		1894.		1895.	
	Rainfall.	Number of Days on which Rain fell.	Rainfall.	Number of Days on which Rain fell.	Rainfall.	Number of Days on which Rain fell.	Rainfall.	Number of Days on which Rain fell.
	Inches.		Inches.		Inches.		Inches.	
Auckland	41·33	177	53·81	203	41·11	180	44·15	204
Te Aroha	54·08	144	61·91	161	52·94	136	59·09	135
Rotorua	66·23	166	93·72	168	51·31	139	66·23	172
N. Pl'mth.	..	..	..	..	63·12	153	67·88	185
Welling'n	67·65	184	53·03	186	51·00	175	61·47	185
Lincoln	27·88	124	22·05	115	29·78	170	30·98	128
Hokitika	..	..	..	..	116·06	181	92·32	159
Dunedin	47·55	160	54·49	184	39·43	190	51·40	177
Chatham Islands	..	..	..	..	35·01	190	34·48	194

The annual average rainfall at the chief stations in New Zealand since 1864 has been:—

North Island.	Inches.	South Island.	Inches.
Mongonui	56·44	Nelson	59·56
Auckland	42·33	Christchurch	26·11
Napier	37·30	Hokitika	119·66
Taranaki	58·38	Dunedin	36·38
Wanganui	37·30	Queenstown	31·68
Wellington	50·80	Invercargill	45·18

The greatest rainfall for any one of these years was 154·45in., at Hokitika, in 1878; and the smallest was 13·54in., at Christchurch, in the same year.

I.—Proportions of Rain in New Zealand at different Seasons.

Stations	Rainfall.					Probability of Rain.					Mean Max. in 24 Hours.
	Winter.	Spring.	Summer.	Autumn.	Total for Year.	Winter.	Spring.	Summer.	Autumn.	Year.	
	Percentage.				In.						
North Island—											
Mongonui	36	24	23	17	58·132	0·66	0·50	0·33	0·89	0·47	3·500
Auckland	32	25	19	24	47·008	0·61	0·52	0·33	0·41	0·47	3·358
New Plymouth ...	29	27	20	23	59·442	0·52	0·51	0·35	0·38	0·44	2·520
Napier	39	15	35	11	36·004	0·26	0·22	0·24	0·17	0·22	...
Wellington ...	29	24	24	22	51·542	0·51	0·43	0·37	0·40	0·43	2·610
South Island—											
Nelson	27	26	29	17	61·599	0·27	0·25	0·22	0·18	0·23	7·189
Hokitika	24	28	28	20	111·653	0·52	0·61	0·57	0·48	0·54	3·532
Bealey	22	28	31	18	105·340	0·53	0·61	0·56	0·47	0·54	3·513
Christchurch ...	31	21	25	23	25·536	0·36	0·33	0·28	0·24	0·30	1·623
Dunedin	23	23	28	26	31·682	0·51	0·55	0·58	0·54	0·54	2·079
Invercargill ...	26	23	26	26	49·732	0·47	0·47	0·40	0·49	0·46	1·130

II.—AVERAGE MONTHLY RAINFALL IN INCHES.

Stations.	Jan.	Feb.	Mar.	April	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.
North Island—	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
Mongonui ...	3·209	7·787	1·492	2·882	5·461	8·319	6·598	6·241	5·831	3·701	4·272	2·339
Auckland	2·071	3·272	3·150	3·402	4·771	5·721	5·279	4·331	4·331	3·520	3·752	3·409
New Plymouth ...	3·231	3·908	2·579	3·520	7·720	5·914	6·293	5·177	5·252	5·969	4·858	4·921
Napier	3·571	3·650	1·130	1·358	1·532	3·402	3·681	6·870	2·414	1·539	1·201	5·630
Wellington ...	3·882	4·453	3·780	3·280	4·540	5·212	5·658	4·299	3·941	5·000	3·500	3·999
South Island—												
Nelson	5·358	8·331	2·063	3·221	5·177	4·441	6·319	6·233	6·319	5·000	4·815	4·319
Hokitika	8·902	9·871	6·752	8·611	6·370	8·240	9·638	9·130	5·878	13·402	12·690	12·169
Bealey	9·681	8·902	3·921	7·433	8·079	5·019	10·378	7·799	5·811	15·501	8·733	14·087
Christchurch ...	2·311	2·370	1·752	1·811	2·280	3·189	2·449	2·319	1·161	2·142	2·130	1·622
Dunedin	3·599	2·142	2·220	2·122	3·949	2·441	2·500	2·228	2·000	2·500	2·969	3·012
Invercargill ...	5·279	3·921	3·980	3·571	5·401	5·019	3·441	4·390	2·661	3·929	4·520	3·622

The seasonal observations in these tables show that the northern part of New Zealand is within the influence of the sub-tropical winter rainfall, the probability of rainfall in winter in that part of the colony being twice as great as in summer.

In the south, however, the rainfall, though irregular, is distributed more equally over the year. The chief difference to be observed is that on the west coast spring rains prevail, and on the east coast summer rains; while in the middle of the colony the driest season is autumn, and in the south it is winter and spring.

The contrast between the east and west coasts in the matter of rainfall is as striking as the difference in temperature. Thus, in the North Island, Napier on the east has only half the amount of rain that falls in Taranaki on the west. But the South Island, with its longitudinal range of lofty mountains, exhibits this feature in a still more marked manner, for the rainfall on the west is nearly five times that on the east. The excess of precipitation on the coast is clearly illustrated by the distribution of the glaciers on the opposite sides of the range: those on the western slope have an excessive supply of snow, and descend to a line where the mean annual temperature is 50° Fahr., while on the eastern slope they descend only to the mean annual temperature of 37°. The winter snow-line of the Southern Alps on the eastern side is 3,000ft., and on the western side, 3,700.

Periods of lasting drought are almost unknown in New Zealand, and in two instances only do the records show a whole month at any station without rain.

WINDS.

Owing to the fact that most atmospheric disturbances pass from west to east, with the centre of the depression either to the north or to the south of or over New Zealand, there is a marked regularity in the successive changes of wind direction. When the centre of the depression passes to the south of New Zealand, which is the more frequent course, then north-westerly followed by south-westerly winds prevail, but they are much modified by the form of the land.

These winds begin in the north-north-west, bringing heavy rain on the west coast, and gradually veer to south-west, after which fair bright weather sets in on that coast; but the same southerly wind, sweeping along the east side of the islands, brings heavy stormy weather, locally known as "southerly bursters," which, from the shape of the coast, reach the region of Cook Strait as south-east storms.

When the centre passes to the north of New Zealand, the result is that north-east winds impinge on the east coast, bringing rain, followed by cold south-easters, with heavy storms of rain and snow during the winter in the south.

All the other winds are either land- or sea-draughts, with light fine weather, or are moderate winds produced by the circulation of the atmosphere round anticyclonic areas of high barometric pressure which are far more persistent in their influence than the fast-moving cyclonic or low-pressure areas.

Radiation.

The effect of the prevalence of clouded sky is best illustrated by the average difference between the readings of the insolation or black-bulb maximum thermometer exposed to the sun, and of the radiation or minimum thermometer exposed to the night sky, and for this purpose two stations on either side of the Southern Alps may be selected.

	Christchurch, East Coast, 43° 32' S.L.			Hokitika, West Coast, 42° 42' S.L.		
	Insolation.	Radiation.	Difference.	Insolation.	Radiation.	Difference
Summer ..	131·72	44·78	86·94	84·02	48·38	35·64
Autumn ..	111·92	37·94	73·98	73·04	41·72	31·32
Winter ..	91·22	28·04	63·18	61·70	33·44	28·26
Spring	124·52	34·34	90·18	75·02	39·56	35·46
Extremes ..	158·00	14·54	143·46	97·34	21·92	75·42

THE MINERAL WATERS OF NEW ZEALAND.

By Sir James Hector, K.C.M.G., M.D., F.R.S.

New Zealand is singularly rich in springs of water holding mineral salts in solution, and these are already noted for their valuable medicinal properties. Some of the acid baths of greatest repute, such as the "Priest's" Bath, at Rotorua, have nothing equal to them in use in any part of the world.

Principal Mineral Springs.

Both hot and cold springs are found, the former being, with few exceptions, confined to the districts of the North Island, where superficial volcanic forces have been active since the commencement of the Tertiary period, and are not yet altogether dormant. A few thermal springs are found to escape from the Upper Mesozoic rocks, in places where the source of heat can be attributed only to chemical decomposition of bituminous matters and sulphides; and in a few instances warm waters spring from Palæozoic rock-formations in the South Island. The cold mineral springs have a wider distribution, but as yet samples have been examined from comparatively few localities.

The mineral waters of New Zealand are classified, from analyses made in the Colonial Laboratory, under the following groups:—

Saline.—Containing chiefly chloride of sodium.

Alkaline.—Containing carbonates and bicarbonates of soda and potash.

Alkaline Siliceous.—Waters containing much silicic acid, but changing rapidly on exposure to the atmosphere, and becoming alkaline.

Hepatic or Sulphurous.—Waters the prominent characteristic of which is the presence of sulphuretted hydrogen and sulphurous acid.

Acid.—Waters in which there is an excess of mineral acids, such as hydrochloric and sulphuric acid.

Mud Baths.—In addition to the clear-water baths, there are what are termed mud baths, in which the mineral waters are mixed with a pasty clay. Their properties vary with the nature, strength, and temperature of the mineral waters, the latter being maintained by steam jets. The best known mud bath is at Sulphur Point, Rotorua. It is an acid bath, and is also rich in sulphuretted hydrogen, one gallon including as much as 10·12 grains of this gas. It has therefore a very powerful action on the liver, but is somewhat dangerous, and must be used with caution.

Analysis.	Grains per Gallon.
Sulphate of soda	13·32
" lime	4·08
" magnesia	4·86
" iron (protoxide)	1·46
" alumina	15·70
Silica	13·61
Hydrochloric acid	5·44
Sulphuric acid	4·36
	62·83

The following is a list of the best-known mineral springs, full details concerning which are to be found in the Official Laboratory Reports, the analyses having been made by William Skey:—

No.	Name and Locality.	Temp. Fahr.	Grains per Pint.	Chemical Character of Water.
	Bay of Islands District.	Deg.		
1	Ohaeawai and Pakaraka ..	60–116	16·8	Acid, aluminous; deposits mercury.
	Hauraki District.			
2	Waiwera	110	17·7	Alkaline, saline.
3	Puriri	60	67·1	Carbonated, alkaline.
3A	Te Aroha No. 1	102	73·0	,,
	,, No. 2	112	67·9	,,
	,, No. 3	112	67·6	,,
	,, No. 4	92	39·9	,,
	,, No. 5	100	73·8	,,
	,, No. 6	104	77·3	,,
	,, No. 7	86	70·5	,,
	Bay of Plenty.			
4	White Island Lake	97–212	1850·8	Strongly acid.
5	White Island Springs ..	210	26·1	,,
	Whakarewarewa.			
6	Turikore, or Spirit Bath ..	96–120	10·9	Sulphurous.
7	Koroteoteo, or Oil Bath ..	214	13·0	Caustic, alkaline.
8	Ngatarawa, Gas Pool ..	124	8·4	Sulphurous.
9	Papatangi, Lobster-pot ..	110	5·7	,,
	Arikikapakapa.			
10	Mud Bath	98	9·2	Saline, acidic.
11	Sulphur Pool	160	6·8	Acidic.
12	Sulphur Spring	73–98	10·0	,,
13	Sulphur Stream	80	8·5	,,
14	Mud Lake	65	6·8	,,
	Rotorua.			
15	Tapui te Koutou, Graham's Farm Bath	90–108	9·1	Alkaline.
16	Kuirau, Washing Spring ..	136–156	9·9	Alkaline, siliceous.
17	Waihunuhunukuri, Lake House Clear Bath	130–170	7·3	Alkaline.
18	Lake House Acid Bath ..	150	11·4	Acidic.
19	Waikite (*a*), Morrison's Hotel Bath	120	9·4	Alkaline.
20	Waikite (*b*), Scott's Bath ..	116	9·6	Alkaline.
21	Hinemaru, Hughes's Baths ..	170	16·7	,,
22	Te Kauwhanga (*a*), Cameron's Bath	105	9·9	Acidic.
23	Te Kauwhanga (*b*), Painkiller	204	13·8	Acidic and hepatic.
24	Perekari, Sulphur Point Boiling Pool	130–150	7·0	Acidic.
25	Mud Bath, Sulphur Point ..	120	7·8	Acidic and hepatic.
26	Hot Pool, Sulphur Point ..	200	12·1	Acidic.
27	Whangapipiro, Madame Rachel's Bath	170–210	14·7	Alkaline and siliceous

No.	Name and Locality.	Temp. Fahr.	Grains per Pint.	Chemical Character of Water.
		Deg.		
28	Otamawhata	144	11·4	Alkaline.
29	Hospital Lake	66	11·3	Acidic.
30	Te Pupunitanga, Priest's Bath	94–110	12·1	,,
31	Matatuatonga	172	13·8	Saline.
32	Toko, or Postmaster's Bath ..	120	11·9	Acidic.
32A	Waikupapapa, or Saddler's Bath	120	7·0	,,
32B	Ngaruapuia, or Gemini Bath..	108	7·8	,,
32C	Waikirihou, or Vaux's Bath ..	112	12·8	,,
	Rotoiti.			
33	Te Kute, mud lake at Tikitere	100–212	6·1	Acidic, hepatic.
34	Te Mimi, hot waterfall, from 33° C.	90–112	3·8	Acidic.
	Taupo District.			
35	Rotokawa, Black Water ..	192	17·8	Acidic.
36	,, Yellow Water ..	152	22·0	,,
37	Wairakei, Kiriohineakai or White Water	112	1·8	Alkaline.
38	Ruahine, Crow's Nest ..	180	19·2	,,
39	,, Witches' Caldron ..	192	20·8	,,
40	,, Ohinekahoro ..	195	23·0	,,
41	,, spring on flat near track	132	2·2	Feebly saline.
42	Otumahike, Acacia	136	3·9	Feebly alkaline.
43	Lofley's Gully, McPherson's ..	96	1·9	,,
44	,, cold stream ..	76	1·3	,,
45	,, warm stream ..	114	2·8	,,
46	,, Sumach ..	106	3·0	,,
47	,, Source No. 1 ..	106	3·0	Alkaline, siliceous.
48	,, Source No. 2 ..	136	19·0	Alkaline, saline.
49	,, Kokowai ..	104	2·0	Feebly saline.
50	Waipahihi, A.C. Bath No. 1 ..	110	4·7	Chlorinated saline.
51	,, ,, No. 2 ..	146	5·7	Saline.
52	,, Tea-tree Spring ..	170	13·4	Alkaline, siliceous.
53	,, Source No. 1 ..	160	10·8	Alkaline.
54	,, Source No. 2 ..	166	13·0	,,
55	,, Waipahihi Stream	98	8·6	Saline.
56	Left bank, Waikato, Waiariki	125	10·8	Chlorinated saline.
	Waikato District.			
57	Whangape	160–200	6·0	Alkaline.
57A	Okoroire	99–113	5·29	Chlorinated saline.
	Ruapehu District.			
58	Onetapu, Waikato	70	58·0	Sulphurous.
	East Cape District.			
59	Roparoa, Waiapu	Cold	..	Saline, bituminous.
60	Manutahi ,, ...	,,	..	,,
61	Pepoti ,, ...	,,	..	Hydrocarbon gas.
62	Waipaoa, Poverty Bay ..	,,	..	Bituminous.
63	Waipiro, Waiapu	144	..	Calcareous, bituminous.

No.	Name and Locality.	Temp. Fahr.	Grains per Pint.	Chemical Character of Water
	Wellington District.	Deg.		
64	Wallingford	60	10·4	Acid.
65	Pahua	Cold	184·2	Alkaline.
66	Burton's Spring	"	..	..
67	Akiteo (*a*)	"	6·24	Alkaline.
68	" (*b*)	"	4·8	Sulphurous.
68A	Kawara, Wanganui River ..	"	5·4	Alkaline, carbonate.
	South Island.			
69	Hanmer Plain Springs, Amuri	90–104	10·8	Alkaline.
69A	The Forks, Nelson	Cold	105·6	Sulphurous.
70	Sumner Lake Springs ..	93	2·3	Saline.
71	Amberley Spring, Canterbury ..	Cold	11·7	Chalybeate.
71A	Waimate, Canterbury ..	"	57·5	"
71B	Ross, Westland	134	3·5	Saline.
72	Wickliffe Bay Spring, Otago ..	..	34·6	"
73	Gibson's Spring, Southland ..	Cold	2·3	Alkaline.

1. *Ohaeawai*, Auckland.—A group of springs used as baths, 17 miles from Bay of Islands, the waters of which are acidic, depositing sulphur and alum on cooling. Silica is deposited as a granular sediment only. These springs are chiefly interesting from their being accompanied by an escape of mercurial vapour, which deposits cinnabar and metallic mercury. Their medicinal action is tonic and chalybeate, and they have a specific alterative action in skin diseases.

2. *Waiwera*, on the coast, 30 miles north of Auckland.—A powerful escape of weakly alkaline and saline water, extensively used as baths for rheumatic and dyspeptic complaints; used internally it has also a mild antilithic action. This spring is largely resorted to, and most comfortable accommodation is provided for visitors.

	Grains per Gallon.
Chloride of sodium	116·715
" potassium	0·091
" lithium	Traces
Iodide of magnesium	Traces
Sulphate of soda	0·383
Bicarbonate of soda	87·513
" lime	10·692
" magnesia	0·954
" iron	0·683
Alumina	Traces
Silica	2·464
	219·495

3. *Puriri*, about ten miles from Grahamstown.—A cold, effervescent water, having valuable properties from the presence of a large percentage of alkaline carbonates. It is bottled both as still

and aërated water, and is coming into repute as an antilithic aperient, and probably would be useful in cases of acid dyspepsia and in disorders of the kidneys and bladder. In chemical properties it approaches very closely to the Fachingen and Ems waters, of Nassau in Germany.

	Grains per Gallon.
Chloride of sodium	21·938
Iodide of magnesium	Traces
Sulphate of soda	0·940
" potash	4·938
Carbonate of iron	Traces
Bicarbonate of lime	28·506
" magnesia	25·625
" soda	452·393
" lithia	Traces
Silica	2·772
Phosphoric acid	Not determined
	537·112

3A. *Te Aroha*, one of the most favourite health resorts in New Zealand, is very prettily situated on the Waihou (Thames) River, 36 miles southward from the Thames, and within easy reach of Auckland by rail. The township takes its name from the adjoining mountain, which rises to a height of over three thousand feet, and contains numerous valleys and gullies filled with a great variety of tree-ferns and other forms of luxuriant vegetation. The climate is equable, dry, and salubrious. The accommodation for visitors is very good, and the natural attractiveness of the place has been largely added to by improvements carried out by the local authorities.

There are eighteen springs in the township (see *post*) under the control of a Domain Board; fifteen of the springs are hot or tepid. Seven large bath-houses have been comfortably fitted up; there is also a large building, containing a number of private single baths, and a summer-house, with fountain, providing the mineral water for internal use. The waters are, with the exception of the sulphur springs, saline and feebly alkaline, and strongly charged with carbonic-acid gas, which is constantly escaping from the springs in large quantities, rendering them effervescent and pleasant. These springs are very similar to those of Vichy (France), Ems (Germany), and Bilin (near Teplitz, Bohemia), and are quite equal to them in strength. Potash exists in all these waters, but only in very small quantity. Baths Nos. 1 to 15 inclusive, and No. 18, are colourless, with the exceptions of Nos. 4, 13, and 14, which are pale-yellow. No. 16 is turbid, owing to the presence of precipitated sulphur.

Bath No. 1, pleasantly situated up the hill, is set apart for ladies, and is much used.

Bath No. 2 is of large size, with waiting and dressing-rooms attached. A short distance from it is a reservoir of hot water, con-

taining 15,000 gallons. Three-fourths of the water from the springs supplying it is at a temperature of 90 degrees, and the temperature of the balance, from certain springs, ranges up to 119 degrees.

No. 3 bath-house is divided into eight private rooms, with a bath in each, fitted with hot- and cold-water valves to regulate the temperature as desired, and each provided with a shower.

Nos. 4, 5, and 6 are extensively patronised, and good bathing-houses are erected over the springs.

No. 15 spring is largely used for drinking, and according to Dr. Alfred Wright, the late physician to the Thermal Springs Domain (from whose admirable little handbook on Te Aroha some of the particulars here given have been taken), its water is a valuable adjunct to the treatment of certain forms of dyspepsia and kidney affections. No. 8 is also a drinking spring, but of lower temperature. No. 16 (cold) has little overflow. Sulphur is found in small quantities in the surrounding clay, and there is emitted a strong sulphuretted-hydrogen gas. No. 17, also a cold spring, is used for application in cases of eye affections. No. 18 is a cold soda-water spring.

In order to meet the demand which has sprung up for a potable supply of Te Aroha mineral water, for drinking elsewhere than at the fountain, Government has permitted the granting of sole rights for a term of years to a company, formed for the purpose of working and distributing the mineral waters, and the Te Aroha Soda and Mineral Water Company (Limited) had a large exhibit of these waters in the New Zealand Court at the Melbourne Centennial Exhibition of 1888.

ANALYSIS OF EIGHTEEN MINERAL WATERS FROM TE AROHA.—No. 4423.

Alkaline Waters 1 to 15, 17, and 18.

No.	Temp. in deg. Fah.	Dimensions of Bath.	Quantity of Water each.	Chloride of Sodium.	Chloride of Potassium.	Sulphate of Soda.	Carbonate of Lime.	Carbonate of Magnesia.	Carbonate of Soda.	Alumina.	Iron Oxide.	Silica.	Total Grains per Gallon.
		Ft. in. Ft. in.	Gals.										
1	102	9 10 x 7 0	1,607	60·25	1·72	38·32	10·77	6·86	461·56	Trace	Trace	7·56	586·99
2	112	9 7 x 8 5	1,725	60·45	1·90	32·67	7·12	4·21	426·29	"	"	7·12	539·76
3	112	...	...	60·51	(with the sodium chloride)	32·82	7·24	4·20	429·19	"	"	7·21	541·17
4	92	11 0 x 9 0	1,771	34·24		19·16	4·62	2·14	246·49	"	"	5·17	311·82
5	100	6 7 x 5 8	998	68·77		36·92	6·91	3·15	476·58	"	"	6·10	598·43
6	104	11 0 x 9 0	2,660	66·23		35·14	7·12	2·99	499·75	"	"	7·14	618·37
7	86	7 6 x 5	1,009	67·13		34·04	7·46	4·34	444·20	"	"	7·01	564·18
8	109	...	...	66·14	1·96	32·91	7·47	4·21	451·97	"	"	8·60	573·26
9	112	...	...	41·29	...	22·16	4·94	2·61	301·17	"	"	6·44	378·61
10	96	...	...	35·24	...	19·19	4·67	2·31	276·19	"	"	6·00	343·60
11	88	...	...	34·69	...	20·12	5·11	2·56	261·44	"	"	6·11	330·03
12	88	...	...	41·66	...	22·96	5·12	2·99	300·97	"	"	7·11	380·81
13	120	...	...	40·67	...	21·96	6·11	3·13	301·64	"	"	6·86	380·27
14	122	...	...	42·61	...	28·16	7·14	3·49	321·64	"	"	6·66	404·70
15	139	...	...	43·11	...	22·16	6·91	3·61	331·76	"	"	7·05	414·60
17	...	...	...	2·71	...	3·92	·64	·27	9·36	...	...	4·21	21·11
18	...	...	...	16·12	...	8·16	1·97	1·01	131·72	Trace	Trace	13·14	172·12

4–5. *White Island.*—A conical island in the Bay of Plenty, formed by the summit of an extinct volcanic mountain rising out of deep water. The crater is occupied by a lake of strong mineral water, which is fed by intermittent geysers and boiling springs surrounding it. All these waters are intensely acid, and deposit sulphate of lime; while the accompanying vapours form irregular deposits of pure sulphur. The first water is too powerful to be used medicinally in its natural state, but might be turned to valuable account in certain chemical manufactures.

6–34 (*Rotorua, &c.*) are associated geographically as all coming from the famous Rotorua and Rotoiti Districts. They, however, present considerable variety in quality, and may be classed as follows:—

6–16. *Alkaline and Siliceous Waters.*—These differ from the ordinary alkaline waters in the presence of silicic instead of carbonic acid as the combining agent. They are remarkable for building extensive mounds and terraces, composed of silica deposited by the cooling water, and involving as it solidifies a certain amount of granular silica, which is held in mechanical suspension; in this manner the wonderful pink and white terraces of Rotomahana and the domes of Whakarewarewa were formed. These waters invariably contain carbonic-acid gas, and in some cases also sulphuretted hydrogen in large quantity, the oxidation of which tends to form sulphurous and sulphuric acid and to set free hydrochloric acid, and by this reaction gives rise to acidic waters. When used as baths these waters have an undoubted alterative action, and are very useful in rheumatic affections, especially in gouty constitutions. This is probably due to the specific action of silicates in promoting the discharge of uric acid from the system, as has lately been pointed out by French chemists.

17–34. *Acidic Waters.*—In the case of these waters the carbonates have been wholly eliminated, and the alkaline salts are formed by a mineral acid, either sulphuric or hydrochloric. In some cases the acid is greatly in excess, forming a bath which has a powerful action upon the liver, and upon diseases consequent on the derangement of that important organ. In some, the presence of sulphurous and hydro-sulphuric acid in large quantities gives these baths great efficacy in skin diseases.

The following are analyses of the four chief types of mineral waters in the Rotorua District:—

I. ACIDIC.

30. "Te Pupunitanga," commonly known as the "Priest's Spring and Bath," aluminous and strongly acid (reaction acid).

	Grains per Gallon. Spring (1881).	Bath (1893).
Sulphate of soda ...	19·24	8·42
" potash ...	Traces	Traces
" lime ...	7·41	4·64
" magnesia ...	3·03	1·24
" alumina ...	21·67	11·27
" iron ...	1·24	Traces
Sulphuric acid ...	22·12	1·42
Hydrochloric acid ...	3·65	8·43
Silica	18·41	7·86
	96·77	43·28
Sulphuretted hydrogen ...	2·98	3·92
Carbonic-acid gas ...	2·16	...

II. ALKALINE SILICEOUS.

27. "Whangapipiro," commonly known as "Madame Rachel's Bath;" saline waters with silicates (reaction alkaline).

	Grains per Gallon.
Chloride of sodium	69·43
" potassium	3·41
" lithium	Traces
Sulphate of soda	1·53
Silicate of soda	31·02
" lime	4·24
" magnesia	1·09
Iron and alumina oxides	2·41
Silica	18·21
	131·34
Carbonic-acid gas	3·79

III. HEPATIC OR SULPHUROUS.

22. "Te Kauwhanga" (*a*), commonly known as "Cameron's Bath"; hepatic, feebly saline, with excess of acid (reaction acid).

	Grains per Gallon.
Sulphate of soda	50·39
" potassium	0·79 "
" calcium	5·68
" magnesia	Traces
" alumina	0·29
Silica	12·64
Hydrochloric acid	13·62
Iron oxides	1·29
Sulphuric acid (free)	5·29
	89·99
Sulphuretted hydrogen	8·81
Carbonic-acid gas	1·96

IV. SALINE SILICEOUS.

6. "Turikore." Faintly acid reaction, which turns to alkaline on boiling.

	Grains per Gallon.
Silicate of soda	16·32
" lime	1·61
" magnesia	1·14
" iron	0·39
Sulphate of soda	13·47
Chloride of potassium	1·24
" sodium	53·61
Phosphate of alumina	Traces
	87·78

35–56. With the exception of the first two these waters are saline and faintly acid in character. They are reported to be suitable for internal and external use, as alteratives, in scorbutic and tubercular diseases, also in chronic nervous affections and cutaneous eruptions. The presence in them of iodine, which was formerly reported, has been disproved by recent analyses of authentic samples.

57. *Whangape*, Waikato, is a hot alkaline water, in composition similar to the springs at Puriri and Waiwera.

57A. *Okoroire Hot Springs* and Sanatorium: These are situated in a picturesque gorge in the upper part of the Thames Valley, near Oxford, at an altitude of 350ft. Excellent hotel accommodation is provided, and both enclosed and open-air baths can be enjoyed. The climate is very invigorating, and capital trout-fishing is to be had in the numerous streams of the district. The following analyses of the principal springs have been furnished by Professor F. D. Brown, of Auckland University College:—

Upper, or No. 2, Bath: Temperature, 113°; flow, 1,300 gallons per hour.

	Grains per Gallon.
Calcium sulphate	2·77
Magnesium chloride	0·69
Sodium chloride	9·48
Sodium carbonate	17·18
Potassium carbonate	1·42
Iron oxide	1·10
Silica and silicates	9·70
	42·34

Lower or Open-air Bath, No. 4: Temperature, 99°; flow, 4,100 gallons per hour.

	Grains per Gallon.
Calcium sulphate	2·42
Calcium carbonate	1·84
Magnesium carbonate	1·03
Sodium chloride	4·34
Alkaline carbonate	11·41
Iron oxide	0·70
Silica and silicates	9·82
	31·56

General remarks: Apart from the medicinal value which these springs possess in common with most other alkaline hot springs, they are remarkable for their large flow of water, and for their freedom from any unpleasant odour or deposit. This fact should render the springs specially attractive to persons in good health.

58. *Onetapu*, at the sources of the Waikato and Wangaehu Rivers. This powerful spring, which issues at the base of Ruapehu, is so strongly charged with sulphates of iron and alumina as to taint the water of the latter river from its source to the sea, a distance of seventy miles. It is only one of many mineral springs that occur in the still active volcanic district of Tongariro.

59-62. In the *East Cape* and *Poverty Bay District* are four—out of some seventeen different springs which have been discovered—that yield hydrocarbons, in the form of either gas or oil, associated with saline waters. The source of these springs is probably to be found in certain bituminous shales at the base of the cretaceous formation.

63. *Waipiro*, in the same district (in which there is no evidence of any volcanic action), is interesting as being both a hot saline spring and as depositing immense quantities of carbonate of lime in acicular crystals. This lime-deposit is built up in the form of a wall, marking the line of fissure through which the water escapes.

64, 65. Are cold springs in the *Wellington District*, and belong to the class of saline waters, which are generally feebly acid. Springing from rocks of Lower Secondary formation, they are interesting from the large proportion of iodine and other exceptional elements which they contain. *Pahua* is the most notable in this respect, and has the following composition:—

	Grains per Gallon.
Chloride of sodium	1,303·329
" potassium	0·501
" magnesium	34·960
" calcium	120·885
Iodide of magnesium	0·582
Bromide of magnesium	Traces
Sulphate of lime	3·026
Phosphate of alumina	0·641
" iron	Traces
" lime	0·430
Bicarbonate of lime	6·451
Silica	1·696
Iodine, free	1·595
	1,474·096

Total quantity of iodine to the gallon (free and combined), 2·177 grains.

66. Burton's, *Taipo*, in addition to iodine, contains traces of arsenic.

67, 68. *Akiteo* (*a*) is a strong saline water containing iodides and bromides, while Akiteo (*b*) is an aërated chalybeate water, and would be valuable as a tonic, being similar to the springs at Pyrmont,

Waldeck, and Recoaro, Venetia. Aërated chalybeate waters of medicinal value are found in many other parts of New Zealand; among these may be mentioned a locality near Whangarei, in the North Island, and Chain Hills, near Dunedin, in the South Island.

69. The springs at the *Hanmer Plains*, Amuri (South Island), are alkaline, with a strong escape of sulphuretted hydrogen, and form useful baths in hepatic and cutaneous diseases.

The water from the springs in question was in 1892 quite clear and colourless. It emitted a very offensive odour, and manifested a strong alkaline reaction after being boiled for a short time. The following are the results obtained by analysis of its fixed salts per gallon. The small quantity of sediment that had formed is excluded from the results :—

	Grains per Gallon.
Chloride of sodium	62·09
" potassium	0·15
" lithium	Trace
Iodide of magnesium	Trace
Carbonate of lime	0·55
" magnesia	1·77
" iron	0·05
Sulphate of soda	7·48
Carbonate of soda	2·66
Phosphate of alumina	Traces
Silica	2·63
	77·38

The total quantity of carbonic acid was not estimated, owing to the small quantity of water sent. The quantity of sulphuretted hydrogen amounted to 2·19 grains per gallon. The water having been analysed as a mineral water, the organic matter has not been estimated, or tested as to nature; but a former analysis made by Professor Bickerton in 1882 is very interesting, as it gives the nature of the sediment and organic matter contained in the water. The sample was taken from spring No. 8 before it was incorporated with No. 1. It is as follows :—

Sediment—silica and free sulphur		1·400
Nitrogen as free ammonia	0·092	
" albuminoid ammonia ...	0·048	
" nitric acid	0·047	
Total nitrogen	———	0·187
Sulphuretted hydrogen, free	...	3·430
Sulphate of lime	9·940	
" potash	1·960	
" soda	0·400	
Bicarbonate "	7·770	
Chloride "	56·230	
Bicarbonate of magnesia	0·640	
Total fixed matter ...	———	76·940
Total grains per gallon		81·957

The total amounts of fixed salts in the two analyses correspond very closely. The sulphates and carbonates in either case are so small that the fact of their varying in the two analyses is a matter of no importance. The fact of the discovery of traces of iodine and lithium in the recent analysis is interesting.

It will be noticed that iodine occurs in this water, but in such small quantity that it can be found only by concentration. The water is hepatic, moderately saline, and should prove useful in diseases of the liver and the skin. The water from these springs was reported on and partially analysed in May, 1867, with very similar results. (Hector, "Transactions N.Z. Institute," Vol. iii., p. 297, 1870.) A sanatorium has been established by Government at this place, of which a short account is appended.

70. At the distance of a few miles from Sumner Lake the water has a temperature of 93° Fahrenheit, as it gushes from the sandstone rock, but it does not contain sufficient matters in solution to entitle it to rank as a mineral water.

71. *Amberley.* This was analysed by Professor Bickerton, of Canterbury College, and reported by him to be a chalybeate water, but unfit for use on account of the organic matter present. The analysis gave the following quantitative results:—

	Grains per Gallon.
Total dissolved solids	37·6
Volatile	8·8
Fixed	28·8
Carbonate of lime	3·6
Carbonate of magnesia	2·2
Chlorine	10·5
Iron protoxide	2·3
Free ammonia	0·069
Albuminoid ammonia	0·034
Sediment	165·2

72. *Wickliffe Bay*, Otago. An analysis of this water is given by Professor Black, of Otago University. It appears to be a saline water:—

	Grains per Gallon.
Sulphuric acid (combined)	39·3
Chlorine	112·0
Magnesia	18·3
Lime	11·5
Alkalies	83·0
Carbonic acid (combined)	12·6
	276·7

73. *Gibson's Spring*, Southland, is a water which is stated to be a specific in diarrhœa, and contains a large amount of organic matter, to some astringent in which its medicinal qualities are probably due.

Hanmer Plains Sanatorium.

The route is from Christchurch to the railway terminus at Culverden, a distance of sixty-nine miles, and thence by coach to Hanmer Plains, a distance of twenty-four miles. The journey is accomplished in ten hours, allowing an hour at Culverden for luncheon.

The sanatorium buildings have been erected by Government on a five-acre enclosure, and provide amply for the comfort of visitors. Accommodation at moderate rates is to be had at two hotels close by. The establishment has become a very favourite resort, over seven thousand baths being taken in the year.

The springs are ten in number; their chemical character analysis shows to be one and the same, the fixed salts in each varying slightly in quantity but not in quality. Nos. 5, 6, 9, and 10 are cold, and, having no outflow, are valueless. Nos. 2 and 3 are small holes without overflow, having temperatures respectively of 94° Fahr. and 140° Fahr. Nos. 1, 8, 4, and 7 are the springs utilised. Nos. 1 and 8 are converted into tanks, 21ft. by 15ft. and 25ft. by 18ft. respectively; they are connected by a 3½in. galvanised-iron pipe, and give the total supply of hot water used in the baths, which is equivalent to about 25 gallons per minute, running to waste eighteen hours out of the twenty-four.

No. 7 is a circular pool some 25ft. in diameter, enclosed by a corrugated-iron fence, and used as a swimming-pool. Its temperature varies, being usually about 80° Fahr., but sometimes cold. There are five dressing-boxes around it. No. 4 is a round open pool some 15ft. in diameter, also fenced in with corrugated iron. The water has a temperature of 83° Fahr., and is used for cooling the supply from Nos. 1 and 8. It is the only mineral water available for the purpose. Its outflow is not allowed to run to waste, but is drawn upon as required. The supply is 4,500 gallons daily.

Wai-rongoa Mineral Water.

North Taieri, Otago. This water has recently been analysed by Mr. A. G. Kidston-Hunter, analytical chemist, of Dunedin, who has kindly forwarded the following report, dated 1st August, 1895:—

"It is bright, sparkling, and clear, and ranks in the first class of pure waters. It contains only a very small percentage of organic matter, no free ammonia is present, and ammonia as albuminoid exists only to the extent of 0·02 parts per million.

"The mineral constituents in the water are: (1.) It is naturally acidulated, and, in the case of the crystal springs, contains a volume of carbonic acid gas in solution. (2.) It is distinctly a chalybeate water, and possesses the peculiar flavour which is characteristic of this variety of mineral water.

"For medicinal purposes it is invaluable for maintaining alkalescence of the blood, and therefore this particular water will be much more beneficial for that purpose than preparations of mineral water, much stronger, artificially produced.

"I may approximately compare the Wai-rongoa Springs to the celebrated mineral springs at Plombières, in France, which the late Emperor Napoleon III. often visited for the purpose of benefiting his health.

"These are also cool chalybeate springs, and specially suitable for gout and rheumatism, as well as internal and spinal complaints.

"As the results of my investigation, I am of opinion that the Wai-rongoa mineral-water springs are of perfect purity, and especially suitable for preparing a high-class mineral water."

Analysis of Dissolved Solid Matter.

	Grains per Gallon.
Carbonate of sodium...	2·22
Chloride of sodium	2·35
Chloride of potassium	0·31
Sulphate of calcium	2·38
Carbonate of calcium	1·82
Carbonate of magnesium	1·00
Carbonate of iron	0·18
Silica	3·22
Alumina	0·25
Organic matter (nitrates, &c.)	0·27
Total grains per gallon ...	14·00

THE THERMAL-SPRINGS DISTRICT AND THE GOVERNMENT SANATORIUM AT ROTORUA.

By A. Ginders, M.D., L.R.C.P. (D.P.H., Cantab.), Medical Superintendent, Rotorua Sanatorium.

Climate of Rotorua.

The geographical position of the North Island of New Zealand will naturally suggest something of the character of its inland climate at an elevation of 1,000ft. Rotorua is some forty miles from the coast. Its elevation is 990ft. above the sea-level. The atmosphere is drier and more bracing than on the coast—in winter considerably colder, and in summer perhaps somewhat hotter, but of a dry pleasant heat, free from the moist oppressiveness which characterizes the summer heat of Auckland and other coast towns. The mean temperature of spring is 53°, of summer 66°, of autumn 57°, and of winter 45°. The relative moisture of the air for the four seasons (taking complete saturation at 100°) is—for spring, 74°; for summer; 66°; for autumn, 67°; and for winter, 74°. The steam which rises

so abundantly and perpetually all over the district no doubt adds considerably to the moisture of the atmosphere. This was clearly shown in the month of June, 1886, when the great eruption of Tarawera took place. The relative moisture for that month was 10° in excess of the average, owing to the immense amount of vapour caused by the eruption. The rainfall for the year is about 50in., and the number of days on which rain falls about 140. Auckland has 18in. less rain, and thirteen more rainy days. The daily range of temperature is greatest in the summer and least in the winter. This obtains throughout the whole of New Zealand, and is, indeed, one of the most charming features of our climate. No matter how hot a summer's day may be, the nights are invariably cool. The mean daily range of temperature for spring is 21°, for summer 28°, for autumn 23°, and for winter 20°.

These annual means, it must be remembered, are based on observations extending over seven years only, and consequently have no more than a relative value. For example, the rainfall for the six years ending with the year 1891 averaged 50in. per annum, but in 1892 it was 67in., and in 1893—an exceptionally wet year—it reached 93in.; so that for these averages to have an absolute value they must be based on observations extending over a far longer period. The annual mean temperature for 1894 was 55°, and the rainfall 55·22in.

The most agreeable months of the year for an invalid to visit Rotorua are February, March, and April; the least pleasant are August, September, and October; but, as there is ample boarding accommodation close to the baths, the invalid is virtually independent of the weather. A climate better adapted to the necessities of the class of patients visiting this health-resort could not be desired. They are, as a rule, persons in fairly vigorous health, in whom it is desirable to maintain the normal power of adaptation and resistance to climatic changes. A climate in which the same conditions prevailed for long periods of the year would fail to secure this end; but one in which the various factors of temperature, moisture, light, electricity, wind, and atmospheric pressure are subject to moderate variations is, in every way, the one to be desired.

It is most desirable that invalids visiting Rotorua should be well informed as to the character of our climate. I have found that considerable misapprehension exists on this point, particularly amongst our visitors from Otago and Southland, their impression being that Rotorua is a very warm place, and that in summer they have to bring only the lightest possible clothing. This is a great mistake, as will be understood at once when I say that in February and March it is not uncommon to find in twenty-four hours a thermometric range of 100 degrees between the solar and terrestrial radiation temperatures. Our visitors, therefore, should provide themselves with both light and heavy clothing, no matter at what season of the year they may arrive.

Area of Thermal-springs District.

The Thermal-springs District of New Zealand comprises an area of upwards of 600,000 acres, or close on 1,000 square miles. The length of the district is some fifty miles, with an average breadth of twenty miles. Its altitude varies from 1,000ft. to 2,000ft. above the sea-level.

Physical Features.

The most striking physical features of this region are the extensive pumice-plains, intersected in various directions by high ranges of igneous formation, which are relieved here and there by enormous trachytic cones. Forests of extraordinary luxuriance and beauty clothe the mountains and border the extensive plateaux, while hot lakes, boiling geysers, and thermal springs are dotted far and wide over the country. The Thermal-springs District, however, as defined on the maps, by no means embraces the whole volcanic and hydrothermal activity of the island. Although the volcanic slopes of Ruapehu and Tongariro bound this region on the south, hot springs are found here and there for fully 250 miles beyond its western boundary—in fact as far north as the Bay of Islands. Within the district it is no exaggeration to say that hundreds of hot springs exist, to say nothing of mud-volcanoes, solfataras, and fumaroles.

Varieties of Mineral Waters.

These springs are of the most varied chemical character, and of every degree of temperature from 60° to 212°. Numbers have yet to be submitted to analysis. Those which have been examined in the laboratory of the Geological Survey Department in Wellington are divided by Sir James Hector into five classes: (1) *Saline*, containing chiefly chloride of sodium; (2) *alkaline*, containing carbonates and bicarbonates of soda and potash; (3) *alkaline-siliceous*, containing much silicic acid, but changing rapidly on exposure to the atmosphere, and becoming alkaline; (4) *hepatic*, or *sulphurous*, characterized by the presence of sulphuretted hydrogen and sulphurous acid; and (5) *acidic*, containing an excess of sulphuric or hydrochloric acid, or both. In addition to these we have saline waters, containing iodine, cold acidulous chalybeates, and saline acidulous chalybeates. These, however, are in situations at present inaccessible to the invalid, or, if not out of reach, at least destitute of the conveniences and comforts essential to the sick, but they are no doubt destined in the near future to attain a high medical reputation.

The Rotorua Sanatorium: Names of the Principal Baths.

The Government of New Zealand has very wisely chosen the southern shore of Lake Rotorua as the basis of operations for opening-up this wonderful district. Here are grouped together numerous examples of the five classes of springs I have mentioned, and here the Government fixed their first sanatorium and bathing establish-

ment. The sanatorium reserve at Rotorua comprises an area of some 50 acres, bounded on the north and east by the lake, and on the west and south by the Township of Rotorua. Twelve years ago this was a howling wilderness, covered with manuka-scrub, and diversified only by clouds of steam rising from the various hot springs. Here the adventurous invalid of that day had to pitch his tent, and be satisfied with a hole in the ground for a bath; and if the spring he wished to use happened to be too hot for his purpose he probably had to dig the hole for himself, and regulate the supply and temperature of the water to the best of his hydraulic ability. In many instances he immortalised himself by giving his name to the spring—a name still retained. Thus we have "Cameron's Bath," "McHugh's Bath," "Mackenzie's Bath," and "The Priest's Bath." Other springs have received their names from some real or imaginary quality. Thus we have "Madame Rachel," "The Pain-killer," "The Coffee-pot," and "The Blue Bath." Now this scene of desolation is completely transformed. Walks and drives planted with evergreen trees traverse it from end to end, fountains—amongst which are the artificial intermittent geysers constructed by Mr. C. Malfroy—and flower-gardens delight the eye, and commodious buildings for the entertainment of invalids are springing up on every side. The principal of these are the Sanatorium Hospital, the medical residence, the Priest's Pavilion, the Rachel Pavilion, the Blue Swimming-bath (to which is attached the sulphur-vapour bath), and Brent's boarding-house.

Considerable improvements in the way of extended accommodation are being carried out, both at the Swimming Bath and at the Rachel Pavilion. From the former the natural sulphur-vapour bath has been separated, and made a distinct department, so that it may be used by ladies while gentlemen occupy the swimming bath, and *vice versâ*. At the Rachel Pavilion, four new private baths have been constructed, with two dressing-rooms attached to each. This is a distinct advance, and will enable the attendant to put two bathers through the one bath in the time usually occupied by one bather when the bath-room is used both for dressing and undressing.

At the southern corner of the Rachel Pavilion a large addition in the way of a ladies' swimming bath is being constructed. It is 48ft. by 24ft., from 3ft. to 4ft. deep, and capable of accommodating twenty bathers at one time. Its capacity is 25,200 gallons, and its temperature will be maintained at about 90°. It will be provided with dressing-rooms and shower baths. This will supply a long-felt want, as the previous arrangement of having hours set apart for ladies to use the gentlemen's swimming bath was, for obvious reasons, unsatisfactory.

The most noticeable addition to our bathing accommodation effected during the past year has been the construction of the new sulphur baths. They are situated on the western shore of the lake, at a distance of about half a mile from the Priest and Rachel

Pavilions, and are approached by a good carriage-drive. They consist of two large public *piscinæ* (each 24ft. by 12ft.) and four smaller ones (each 12ft. by 10ft.), one of the former and two of the latter being appropriated to each sex. There are twenty dressing-rooms, ten in each department. It has been found necessary to leave the baths open to the air, as the gases arising from them are apt to produce vertigo and fainting unless they are exposed to very free ventilation. In the summer weather they will be sheltered from the sun by canvas awnings. The temperature of the spring supplying these baths is 114° Fahr., and the outflow varies from six to seven thousand gallons per hour. The water rises through a fissure in the rock of considerable length, and an efficient method of regulating the temperature has been devised by our ingenious engineer, Mr. Malfroy. It consists of a series of sluices, one of which is connected with each bath; if all the sluices are closed the water cools by natural radiation of heat, and if any sluice is opened the bath fed by it rises in temperature.

The Hospital.

The hospital, which was opened in 1886, was unfortunately destroyed by fire in November, 1888. A new and far larger building has lately been erected by the Government. It is designed to accommodate twenty-one patients—twelve males and nine females. The stipulations made by the Government with regard to admission are that the patient shall be able to show that his case is one likely to be benefited by the use of the baths, and that he is unable to pay the usual hotel or boarding-house charges.

The Regulations and Tariff.

The following is a copy of the regulations under which patients are admitted to the institution:—

1. Applications for admission of persons shall be addressed to the Resident Medical Officer at the Sanatorium, Rotorua.

2. No person shall be admitted (unless in accordance with Regulations 5, 6, and 7) except on the recommendation of the Hospital or Charitable Aid Board of the district to which he belongs, or of the Trustees of the benevolent society or hospital (if separate institutions) of the town in which he lives.

3. The charge for maintenance and treatment is 21s. a week.

4. The Board or Trustees, in making such recommendation, shall guarantee the cost of such patient, shall send him or her at their own charge to Rotorua, be responsible for his or her return-passage, and provide a sufficient supply of clothing. They shall also furnish a report on the case by a duly-qualified medical practitioner, in order that it may be seen whether the case is one that is likely to profit by treatment at the Sanatorium.

5. Members of any duly-registered friendly society may be admitted, on the recommendation of the lodge to which they belong, on the same terms as patients recommended by a Hospital or Charitable Aid Board, and Regulations 3 and 4 shall be read as applying to them in all respects: Provided that not more than three such persons shall be resident at the Sanatorium at any one time, and that all the hospital beds are not required by patients admitted under Regulation 2.

6 When all the beds are not occupied by patients admitted under Regulations 2 and 5, the Resident Medical Officer may at his discretion admit persons, being *bonâ fide* hospital cases, who have undertaken to pay 30s. a week for maintenance and treatment.

7. When all the beds are not occupied by patients admitted under Regulations 2, 5, and 6, persons may be admitted on the following conditions:—

(1.) That the Resident Medical Officer has certified that each such person is likely to be benefited by treatment at the Sanatorium.

(2.) That the expenses to and from Rotorua are provided by each such person, together with a sufficient supply of clothing.

(3.) That not more than four such persons shall be resident at the Sanatorium at one time.

8. The stay of each patient is limited to three months, but the Resident Medical Officer can, at his discretion, extend the period to six months.

This means, in brief, that patients sent by the Charitable Aid Boards of the country are to be admitted at all times at one guinea per week; that three beds may be occupied by members of registered friendly societies on the same terms; that not more than four free patients shall be resident at the same time; and that if all the beds are not occupied by the three classes of patients enumerated, the medical officer may, at his discretion, admit suitable cases paying for themselves at the rate of 30s. per week. Such patients, if they wish to avoid disappointment, should not leave their homes until they have communicated with the resident medical officer, and been assured by him that their cases are suitable, and that they will be admitted on arrival.

It should be distinctly understood that Hospital Trustees, or Charitable Aid Boards, or Friendly Societies recommending patients to this institution are held responsible for payment in case such patients are unable or fail to pay for themselves.

It cannot be too widely known that there is no private accommodation in this institution: whatever the regulations under which the patients are admitted, they are on equal terms; they take their meals together in the same hall; the women have their own sitting-room and dormitory, containing nine beds; and the men have their sitting-room and dormitory, containing twelve beds. Patients are admitted for three months, and if, in the opinion of the medical superintendent, a second period of three months is desirable, it is granted; but in all cases six months is the extreme limit.

The great object of this institution, as at present constituted, is to enable the Charitable Aid Boards of the country to send up for treatment a class of patients who would not otherwise be able to avail themselves of the springs, while at the same time in no way interfering with the private enterprise of hotel and boarding-house proprietors.

Analysis and Action of the Waters.

Patients who frequent our springs are always anxious to see the analysis of the waters in which they bathe, and are usually under the impression that they absorb into their systems the entire list of salts enumerated. This is an error. The body cannot absorb any salts from an aqueous solution. If the water, or any portion of it, is allowed to dry on the skin, a minute quantity of the constituent solids, of course, remains, which, through the friction of the clothing,

becomes incorporated with the fatty elements of the integument, and is eventually absorbed. After a course of sulphur baths the underclothing is redolent of sulphur for some time after leaving the springs, and silver carried in the pockets becomes blackened, showing that a considerable amount of sulphur has been absorbed in the manner described. The shipwrecked sailor adrift in a boat finds his thirst relieved for a time by saturating his shirt with sea-water; if he absorbed the salt his suffering would be only intensified, but the wet shirt, by temporarily checking the transpiration and evaporation of moisture from his body, affords him relief. The direct influence of hot mineral water used for bathing—apart from the effect of temperature—is twofold, according to its chemical character: it either excites and stimulates the nervous and vascular elements of the skin, as in the case of acid sulphur waters; or it exercises a soothing and emollient effect, as in the case of alkaline siliceous waters. We should never lose sight of the fact that the skin is the most important emunctory of the body; and that, as a means of maintaining its normal functional activity, bathing, well-advised and regulated, is the most efficient agent we can employ; and that in skin diseases especially our cures are brought about not by any absorption of fixed salts contained in the water, but by the prolonged maceration of the cuticle, causing the ready removal of the *débris* of dead and diseased cells, and their gradual replacement by cells of a more healthy character, due to the employment of a suitable regimen and the influence of a highly vitalising climatic environment.

Properties of the principal Bath Springs at Rotorua.

The following springs are those which have the most valuable properties, and whose therapeutic action is best known:—

1. *Te Pupunitanga*, or "*The Priest's Bath*," at Rotorua, only a few feet from the lake's edge; the water is strongly acidic and aluminous, depositing flocculent sulphur on the bed and sides of the bath; reaction, acid. It is considered the finest and most curative bath in the southern hemisphere. Analysis (in grains per gallon): Sulphate of soda, 19·24gr.; sulphate of potash, traces; sulphate of lime, 7·41gr.; sulphate of magnesia, 3·03gr.; sulphate of alumina, 21·67gr.; sulphate of iron, 1·24gr.; sulphuric acid, 22·12gr.; hydrochloric acid, 3·65gr.; silica, 18·41gr.—total, 96·77gr.; also, sulphuretted hydrogen, 2·98gr.; and carbonic acid gas, 2·16gr. Temperature: From 98° Fahr. to 106° Fahr.; average, 99° Fahr. Special indications: Gout, dyspepsia, sciatica, skin diseases, disorders of the liver, sexual impotence, cold feet, amenorrhœa, dropsy, and all forms of rheumatism.

We have no spring in the district that has attained a higher reputation, or proved itself more generally useful, than that known as the Priest's Bath. The variation in temperature is due to the rise and fall of the lake and the direction of the wind. When the lake is high and the wind blowing towards the baths the conditions are favourable to a high temperature, and *vice versâ*, the

cold water of the lake affording a more efficient barrier to the escape of heat than the open pumice-gravel of which the shore is composed. A patient emerging from his bath looks like a boiled lobster, and I regard this determination of blood to the skin as a most important therapeutic factor: the vascular and nervous apparatus of the skin is powerfully stimulated by it, and internal congestions are relieved. Our alkaline waters, on the other hand, which contain the chlorides and silicates of the alkalies, have a soothing and emollient effect on the skin, and are of great value in eczema, and other cutaneous ailments. The water of the Priest's Spring is brilliantly clear when undisturbed, and pale-green in colour. A faint odour of sulphuretted hydrogen pervades the neighbourhood, which gas, together with sulphurous acid, is copiously evolved. Since the eruption of Tarawera this offensive odour has been much modified, owing, I believe, to an increased evolution of sulphurous-acid gas at that time. Fortunately for the nasal organs and general comfort of the bathers, these gases effect a mutual decomposition, resulting in the formation of sulphur and water, thus—$2H_2S+SO_2=3S+2H_2O$; which means that two parts of sulphuretted hydrogen, combining with one part of sulphurous acid, form three parts of sulphur and two of water. Wherever steam charged with these gases is able to penetrate, sulphur is deposited. This is the origin of all the sulphur in the district. It permeates readily the siliceous sinter rock, forming beautiful needle-like crystals of sulphur in the interspaces. Sulphur being thus constantly transformed from the gaseous to the solid state in the water of this spring, it is very possible that, coming into contact with the skin in this nascent and impalpable form, its therapeutic power may be considerably enhanced: there can be no doubt about its absorbtion, for our patients tell us that their underclothing is redolent of sulphur for weeks after returning home. The Priest's bathing-pavilion is a building 74ft. long by 44ft. wide, having a superficial area of 3,256 square feet. It is divided into male and female departments. Each department comprises two public *piscinæ*, 16ft. by 12ft., with two private baths (each 6ft. by 6ft.) for special cases, lounging-rooms, and comfortable dressing-rooms. Each bath is provided with a cold fresh-water shower, and douches either hot or tepid, thus materially enhancing the hydropathic efficiency of this remarkable water.

2. *Whangapipiro, or "Madame Rachel's Bath,"* at Rotorua.—Analysis (in grains per gallon): Chlorine of sodium, 69·43gr.; chloride of potassium, 3·41gr.; chloride of lithium, traces; sulphate of soda, 11·80gr.; silicate of soda, 18·21gr.; silicate of lime, 4·24gr.; silicate of magnesia, 1·09gr.; iron and alumina oxides, 2·41gr.; silica, 5·87gr.—total, 116·46gr. in one gallon; also carbonic-acid gas, 3·79gr. Temperature: Formerly 174° Fahr., but rose to 194° Fahr. after eruption in June, 1886. Special indications: Diseases of the skin, especially psoriasis. By internal administration (whereby an increase in the elimination of urea and uric acid is produced) in rheumatism, gout, and certain forms of dyspepsia.

The "Rachel" bathing-pavilion adjoins Te Pupunitanga, or "The Priest's Bath." Here we have a water diametrically opposite in character to the last described—an alkaline siliceous water, having a temperature at its source of 180°. This source is a cauldron of enormous depth, situated some 200 yards from the bathing-pavilion, and yielding 50,000 gallons daily. We have a simple system of cooling by which the water may be used at any desired temperature. Here also is a separate department for either sex, each containing a public *piscina* 16ft. square, four private baths, a lounging- or waiting-room kept at a constant temperature of 70° by hot-water pipes, and dressing-rooms. The reaction of the water is alkaline, and it contains a small amount of sulphuretted hydrogen. The delicious sense of *bien-être* produced by bathing in this water, with the soft satiny feeling it communicates to the skin, must be felt to be appreciated. It is useful in all forms of skin-disease—indeed, in eczema it may be considered a specific if continued long enough, together with a suitable regimen. I frequently recommend the internal use of this water. Its taste is not unpleasant, and its action is mildly antilithic. Waters containing silicates are said to be useful in the uric-acid diathesis, and I have certainly found it suit gouty patients admirably.

3. *Oruawhata*, a hot pool within the Sanatorium grounds, supplying the warm swimming bath, was originally a favourite Maori cooking and bathing place. Fifty years ago it was rendered *tapu* for a long period by the fact that a Maori boy, when flying his kite and running backwards, fell bodily into it and was scalded to death However, it was used for both cooking and bathing as lately as 1880. At the time of the Tarawera eruption in 1886 it was a single irregularly-shaped pool, having two powerful springs at its northern end. These our engineer, Mr. C. Malfroy, has isolated from the surrounding water and converted into artificial intermittent geysers, thus forming not only one of the most interesting objects in the Sanatorium grounds, but a work of eminent practical utility, as we are able to convey the water from the geysers to the swimming bath at an almost boiling temperature, instead of leaving it exposed to a large cooling area, as was the case formerly. This hot basin—some 60ft. long by 30ft. wide—is now built round with concrete, and protected by a substantial iron railing. The water is saline in character, with silicates. Analysis (in grains per gallon): Chloride of sodium, 60·44gr.; chloride of magnesium, 1·04gr.; sulphate of lime, 5·48gr.; silicate of magnesia, 0·32gr.; silicate of soda, 8·38gr.; silicate of iron oxide, 1·42gr.; silica, 14·20gr.—total 91·28g. in one gallon. Sulphuretted hydrogen, 5·52gr.; carbonic acid, 2·21gr. Temperature: 140° Fahr. Special indications: Almost identical with those of the foregoing spring (Whangapipiro).

The Blue Bath is a warm swimming bath, 62ft. long by 24ft. wide. It is built of stone and concrete, with a smooth surface of Portland cement; has a depth of from 4ft. 6in. to 3ft., and contains about 30,000 gallons of water, maintained at a temperature of 98°.

This is the popular pleasure-bath of the Sanatorium, in which our rheumatic invalids are able to take exercise without undue fatigue. It was completed in 1885, and opened by Mr. George Augustus Sala. While excavating this bath the workmen struck upon a remarkable sulphur-cavern, its roof and sides thickly coated with brilliant acicular crystals of sulphur, and at its base a hot-spring yielding steam so strongly impregnated with sulphur-gases as to be quite irrespirable. This we have conducted to the surface, and employ as a sulphur-vapour bath, diluting it as occasion requires with steam of a milder character. In sciatica, and all forms of rheumatism, this is one of our most popular and efficacious remedies.

4. *Cameron's Bath* (known as "*Laughing-gas Bath*"), within the Rotorua Sanatorium Reserve, a quarter-mile from the bath-pavilion, on the shores of Lake Rotorua, at a point called Te Kauwhanga. It is a muddy pool 30ft. in diameter, with a constant discharge of gas (sulphuretted hydrogen, with sulphurous acid), which, when inhaled, causes faintness and great excitement of the respiratory and vascular functions. The pool has no outflow; the water is a dirty chocolate colour, hepatic, feebly saline, and has a persistent acid reaction and offensive odour. Bathing in the spring itself is to be deprecated. Analysis (in grains per gallon): Sulphate of soda, 44·54gr.; chloride of potassium, 1·67gr.; chloride of sodium, 12·04gr.; chloride of calcium, 5·22gr.; chloride of magnesium, 1·28gr.; chloride of aluminium, 0·62gr.; silica, 9·22gr.; hydrochloric acid, 5·92gr.—total, 80·51gr. in one gallon. Sulphuretted hydrogen, 4·42gr. Temperature: 109° Fahr. to 115° Fahr.

5. *The Painkiller Bath*, situated at Te Kauwhanga, resembles the above water (No. 4), but is a little more saline and hepatic; it is one of the most valuable sulphurous springs in the reserve. The water has a distinct acid reaction, an offensive odour, and deposits a brownish sediment on being boiled. This spring has great curative properties, and two baths with sheltered dressing-accommodation have been built in connection with it. Analysis: Chloride of sodium, 46·42gr.; chloride of potassium, 1·71gr.; chloride of calcium, 2·66gr.; chloride of magnesium, 1·47gr.; chloride of iron and aluminium, 4·22gr.; sulphate of soda, 29·14gr; hydrochloric acid, 6·84gr.; silica, 18·02gr.—total, 110·48gr. in one gallon. Sulphuretted hydrogen, 4·84gr. Temperature: 204° Fahr.

6. *The Coffee-pot*, also situated at Te Kauwhanga, a small mud spring, 10ft. in diameter; the water is thick, brown, and muddy, covered with an oily slime, in fact, of a most uninviting appearance; it has a persistent acid reaction and an offensive odour; hepatic and feebly saline. Analysis: Silica, 13·86gr.; sulphate of soda, 23·71gr.; chloride of potassium, 0·77gr.; chloride of aluminium, 1·46gr.; chloride of calcium, 2·04gr.; chloride of magnesium, 1·62gr.; chloride of iron, 1·47gr.; hydrochloric acid, 7·66gr.; sulphuric acid, 7·60gr.—total, 60·19gr. in one gallon. Sulphuretted hydrogen, 3·19gr. Temperature: 80° to 100° Fahr. Special indications of the last three

baths (Nos. 4, 5, and 6): Chronic rheumatism and gout, chronic rheumatoid arthritis, cutaneous diseases.

7. *Hinemaru* ("*Stonewall Jackson*" or "*McHugh's Bath*"), situated in the Rotorua Sanatorium Reserve. The water is of a yellowish colour, of a saline character, with silicates; reaction, alkaline. Analysis: Chloride of sodium, 93·46gr.; chloride of potassium, 4·69g.; chloride of lithium, traces; sulphate of soda, 2·76gr.; mono-silicate of soda, 6·41gr.; silicate of lime, 2·89gr.; silicate of magnesia, 1·02gr.; iron and aluminium oxides, 2·10gr.; silica, 8·29gr.—total, 121·62gr. in one gallon. Temperature: From 98° Fahr to 118° Fahr. Special indications: Cutaneous diseases, rheumatism; if filtered, suitable for internal administration in atonic dyspepsia and uratic diathesis (dose, one tumbler thrice daily between meals).

The above analyses were made in 1881 and 1882, and a re-analysis was made in 1893 by the Government Analyst, who reports as follows: "These results show that some changes have taken place in the constitution of several of these waters since their analysis in 1881 and 1882—that is, prior to the volcanic eruption of Tarawera. The 'Painkiller' Spring has evidently acquired quite a new character, being an alkaline in place of an acidic water. The Hinemaru Spring (McHugh's Bath) contains a little less chloride of sodium than formerly, and more silica, while Rachel's Spring contains a little less of the alkaline sulphate. These facts are interesting, but with the exception of the total change of character of the 'Painkiller' water, nothing has been elicited to show that any of them have changed so much as to seriously affect them for the medical purposes to which they have hitherto been applied." This should reassure those who may have been led astray by a report—diligently circulated by certain interested individuals—that our springs are weaker and less efficacious than formerly. It is true that there is no spring in the district so erratic in its temperature and density as the Priest's Bath, but, fortunately, temperature and density are not its most important therapeutic factors. The analysis of 1893, as compared with that of 1881, shows that there has been a falling-off in certain of its negative ingredients, but the curative properties of the water are maintained by an actual increase in two, at least, of its more positive constituents—free hydrochloric acid, and sulphuretted hydrogen. No one has a better opportunity of judging of the physiological and curative effects of this water than I, who, for the last eleven years, have had the advantage of daily observation; and my deliberately expressed opinion is that the water of the Priest's Bath is as powerful a skin stimulant, and as valuable a curative agent, as it was eleven years ago.

Analysis of Five New Springs.

Perhaps the most interesting information offered in this report is the first analysis of five new springs which have lately been

brought into notice, owing to the overcrowding of the Priest's and Rachel Baths. No doubt they will shortly be brought under the control of the Government authorities, as part of the Sanatorium Reserve, and suitable bathing accommodation built. They are as follows:—

(1.) *Matuatonga, or "Corlett's Bath."*

	Grains per Gallon.
Chloride of sodium with a little potassium ...	66·44
" calcium	6·72
" magnesium	0·31
Sulphate of lime	10·32
Carbonate of lime	0·21
Alumina	Trace
Soda silicate with a little carbonate ...	29·27
	113·27
Sulphuretted hydrogen	2·21

This water is very similar to the Rachel Spring, and calculated to fulfil similar therapeutic indications. Being situated some thirty or forty yards from the new sulphur baths, and at an elevation of about 8ft. above them, the water of this spring may be easily led into the baths. This would give us as complete an arrangement as is at present afforded by the Priest's and Rachel Baths; and, as regards showers and douches, the necessary power will be readily obtainable from the cold water main, which is within reasonable distance.

(2.) *Toko, or "The Postmaster's Bath."*

	Grains per Gallon.
Sulphate of soda	45·09
" potash	0·41
" lime	2·45
" magnesia	0·30
" alumina	1·34
Iron oxides	0·71
Sulphuric acid (free)	17·86
Hydrochloric acid (free)	7·40
Silica	10·11
	85·67
Sulphuretted hydrogen	5·69

This is a strongly acidic water, fulfilling all the therapeutic indications of the Priest's Spring.

This spring has died out since the excavations were made for the new sulphur baths.

(3.) *Waikupapapa, or "The Saddler's Bath."*

	Grains per Gallon.
Sulphate of soda	33·18
" potash	0·26
" lime	2·44
" magnesia	0·24
" alumina	0·32
Iron oxides	Trace
Sulphuric acid (free)	4·29
Hydrochloric acid (free)	7·49
Silica	8·23
	56·45
Sulphuretted hydrogen	3·61

This is an acidic water, similar to the foregoing, but less stimulating, and consequently more suitable for delicate skins.

(4.) *Ngaruapuia, or "The Gemini Bath."*

	Grains per Gallon.
Sulphate of soda	29·80
" potash	0·64
" lime	6·87
" magnesia	0·31
" alumina	...
Iron oxides	Trace
Sulphuric acid (free)	3·11
Hydrochloric acid (free)	6·76
Silica	12·01
	59·50
Sulphuretted hydrogen	... Traces.

This is a valuable acidic water, less astringent and stimulating than the foregoing, from the fact of its containing less free acid and more silica, and is, in many cases of skin disease, a most desirable intermediate water between the soothing alkaline waters and the more powerful waters of the acid type.

(5.) *Waikirihou, or "The Vaux Spring," Supplying the New Sulphur Baths.*

	Grains per Gallon.
Sulphate of soda	32·87
" potash	1·24
" lime	4·93
" magnesia	1·83
" alumina	33·22
Iron oxides	4·42
Sulphuric acid (free)	30·32
Hydrochloric acid (free)	6·14
Silica	17·61
	132·58
Sulphuretted hydrogen	3·02

This is the strongest acidic water in the district, and most valuable as a local application to rheumatic or injured joints, but, for immersion of the whole body, requiring the greatest care and caution. Its action is that of a modified mustard-plaster, producing a strong determination of blood to the surface, the redness remaining much longer than that caused by the Priest's Bath. The cause of this will be seen on comparing the amount of free acid in the two waters. It is not a water to be trifled with; and patients with weak hearts or delicate skins will do well to take advice before using it.

The latest discovery with regard to the therapeutic power of this water is, that it abolishes the craving for alcohol. If I had heard this from one or two individuals only I might have disregarded it, but hearing it commented on almost daily, I have taken the trouble to look up the cases. Two of these were very aggravated examples of inebriety, whose acquaintance I first made in the Court-house, where I found myself under the painful necessity of fining each of them the usual 5s. and costs. They assure me that they find themselves new men since bathing in these sulphur baths, and have lost all taste and desire for liquor of every kind. Three other patients of mine, to whom I found it necessary to advise total abstinence, corroborate this testimony, stating that they have felt no craving for stimulants since using the baths. They are very enthusiastic in the matter, and think that an asylum for inebriates should be established here at once. No doubt the craving for alcohol is kept up by a congested state of the mucous membrane of the stomach, so that the *modus operandi* of these waters is not far to seek; the congestion is relieved by the powerful determination of blood to the skin. In like manner, hæmorrhoids are cured by our acid waters, from the relief afforded to a congested liver. This should be good news for the Prohibitionists, and, in the event of their floating an inebriate asylum company, I shall expect to be remembered in the distribution of promoters' shares.

These baths have been much frequented during the past season of 1895–96, and have added greatly to their reputation by the relief they have given to many in all forms of rheumatism.

The Whakarewarewa Baths.

At Whakarewarewa, two miles from Rotorua, there are two springs which have a well-merited reputation.

1. *Turikore*, or the "*Spout Bath.*"—This water is in great repute among the Maoris for the cure of cutaneous diseases, rheumatism, lumbago, sciatica, and kidney complaints. It is of a sulphurous character, and has a faintly-acid reaction, which changes to alkaline on boiling the water. Analysis: Silicate of soda, 16·32gr.; silicate of lime, 1·61gr.; silicate of magnesia, 1·14gr.; silicate of iron, 0·39gr.; sulphate of soda, 13·47 gr.; chloride of potassium, 1·24gr.; chloride of sodium, 53·61gr.; phosphate of

alumina, traces: total, 87·78gr. in one gallon. Temperature: 96° Fahr. to 120° Fahr. Special indications: Cutaneous diseases, lumbago, chronic rheumatism, local palsy of muscles.

2. *Koroteoteo*, or the "*Oil Bath.*"—This water is alkaline and slightly caustic. Analysis: Mono-silicate of soda, 2·08gr.; mono-silicate of lime, 3·16gr.; mono-silicate of magnesia, 0·76gr.; mono-silicate of iron, 0·85gr.; sulphate of soda, 7·49gr.; chloride of potassium, 1·46gr.; chloride of sodium, 66·34gr.; chloride of lithium, traces: total, 104·54gr. in one gallon. Temperature, 212° Fahr. Special indications: Cutaneous diseases.

Cases suitable for Treatment.

The selection of cases suitable for treatment at Rotorua is a most important matter. I am aware that there is a strong tendency, both with physician and patient, to try anything as a *dernier ressort*. It is a serious matter, however, to put a patient to the trouble and expense, and possibly pain, of making a long and weary journey, to rob him of the comforts of home and the society of his friends, without at least some reasonable hope that his labour will not be thrown away.

The two most important questions to be answered before deciding to send a case to Rotorua are—(1) Has the patient sufficient strength to bear the journey? and (2) is the case one likely to benefit by the treatment? With regard to the first question, it must be remembered that the long thirty-four miles coaching journey over a bad road is a thing of the past. The railway now gives through communication with Auckland within a little over ten hours. Still, a ten hours' railway-journey will not be accomplished by an invalid without some fatigue, and possibly increase of pain; but, if there be sufficient vitality to render such inconvenience a matter of mere temporary concern only, it is no insurmountable barrier. Nor need the partial or even total loss of the patient's locomotive power prevent his coming. We have many instances on record of patients who on arrival required the aid of crutches, or had actually to be carried to the bath, and yet went away enjoying the full use of their limbs. In considering the second question, medical men will not need to be reminded that where profound organic structural change exists very little benefit can be expected, so that considerable discrimination must be exercised in selecting cases of paralysis for treatment. Where nerve-elements are extensively destroyed hot water has no regenerating power that I am aware of. The same may be said of osteo-arthritis or chronic rheumatic arthritis, with structural change and great deformity of the joints. Such cases may improve in general health, gain weight, and lose pain, but there the improvement ends. Our treatment is contra-indicated in phthisis as long as active destructive change is going on in the lungs. Certain chronic *poitrinaires*, however, pay us periodical visits with advantage.

Paraplegia Cured.

Primary functional paralysis, in which there is reason to believe that the nerve-centres have undergone no organic change—such paralysis, for example, as may be induced by depressing morbid influences, as malaria, influenza, sexual excesses, mental or physical fatigue, exposure to wet and cold, alcoholism, or hysteria—are likely to benefit by treatment at Rotorua.

Several cases in point are given in the New Zealand Year-book for 1893. Two illustrative cases will be sufficient to quote here.

H. C., a bushman, aged twenty-three, had become completely paraplegic, presumably from exposure to wet and cold. He had been for many months dependant on a Charitable-aid Board, which sent him to Rotorua. For three weeks he was carried to his bath, at the end of which time he was able to stand alone. At the end of five weeks he could walk with two sticks, and ride on horseback. In three months he was as well as he had ever been in his life.

The wife of a Native chief from the Napier district was brought here for treatment at the beginning of March, 1895. Two years ago she was thrown from a buggy and suffered concussion of the spine, this resulted in complete paraplegia with paralysis of the sphincters. She was unable to stand; her general health was excellent, and there was very slight muscular atrophy. After six weeks' treatment —chiefly at the Whakarewarewa Springs—she was able to walk with the aid of two sticks, and fast regaining control of the bowel and bladder. I have little doubt she will make a perfect recovery.

Rheumatism and Skin Diseases.

Rheumatism and skin-diseases, and these usually in a very chronic form, furnish fully 75 per cent. of the cases we are called upon to treat. In all forms of rheumatism and rheumatoid arthritis we have much success, especially where arthritic degeneration is not too pronounced. Hot acidic sulphur-baths at a temperature not exceeding 104°, or sulphur-vapour up to 115°, taken twice daily for a carefully regulated time, according to individual tolerance—which we find to vary greatly—forms our routine treatment. These waters redden the skin, and cause some tingling sensation for an hour or two. Occasionally some irritation of the skin occurs, which is readily allayed by a few warm alkaline showers or douches. In those numerous and well-known cases of chronic hip-rheumatism, often due to injury, we find nothing so efficacious as the hot douche. The beneficial result is due partly to the quality of the water, and largely to its mechanical action: fortunately, our arrangements are so complete that we are able to vary the temperature and percussive power of the douche at will. We are able to quote several cases of cure even where a considerable amount of fibrous anchylosis has existed. If the rheumatic patient progresses favourably under the bath-treatment alone, neither medicines nor electricity are employed, but if after a few weeks his progress is not satisfactory we

find galvano-faradism a valuable adjunct. Usually thirty cells are put into circuit with a faradic machine, and the double current applied in the labile manner to the parts affected for fifteen minutes daily. We find this answers better than either current alone. In cases of muscular atrophy faradism is resorted to from the commencement. Massage is also occasionally of use.

Great Success in Cases of Skin-disease.

Perhaps there is no class of diseases in which we meet with more uniform success than those affecting the skin. The solid and gaseous constituents of the waters are no doubt important; but I have more confidence in the influence of change, and all that it implies in its effect on both mind and body, combined with the prolonged maceration of the cuticle, and the constant exposure of the skin to air and light which frequent bathing entails. General eczema, which may have resisted every form of treatment for years, is generally cured in a period varying from six to thirteen weeks if the patient is willing to submit himself to rigorous medical discipline. The same may be said of psoriasis,—at least, as far as its disappearance for a longer or shorter period is concerned. It is rare indeed to see psoriasis completely eradicated. For ringworm and the impetiginous eczema of children the water of the Priest's Spring is a specific. In sycosis epilation is necessary, after which our alkaline waters complete the cure.

We have had great success during the past year in the treatment of skin diseases. Several cases of general eczema have been completely cured in the Sanatorium, and I have at present a female patient about forty years of age presenting the worst example of chronic psoriasis I have yet seen. When she arrived, three months ago, her body was covered with large blood-red patches of psoriasis, so infiltrated and thickened as to raise them above the level of the surrounding skin. This state of things had existed several years. I tried the new thyroid remedy with her, but found she could not bear the constitutional disturbance it caused. She has had the usual routine treatment, with two Priest's baths daily, and I shall have the pleasure of discharging her in a few days without a vestige of her trouble remaining. In another case—one of lupus erythematosus of the face—the thyroid treatment agrees, and the patient, who has been with us four weeks only, presents a greatly-improved appearance. In these cases we do not pin our faith exclusively to the baths, to the exclusion of all internal medication. However inoperative such treatment may have been at home, we find that, in conjunction with the new environment, rest, change of air and scene, with the baths, such treatment is of the greatest use. Patients frequently decline to take medicine, saying that they have exhausted the Pharmacopœia, and have come to Rotorua to try the baths as a last resource, but have little faith in them. Such cases are discouraging. It is difficult to engraft an improved physical state on a hopeless mental condition.

Neuralgia.

Neuralgias, as a rule, do remarkably well. Patients suffering from sciatica are a numerous class with us, most of them presenting a very chronic history. When the disease is not distinctly associated with the gouty or rheumatic diathesis, is not of long standing, and has been caused by exposure to cold, it is very quickly cured. A few baths relieve the pain, and there is rarely any stiffness or weakness remaining. Chronic cases are not so easily dealt with—they require great patience and perseverance on the part of both physician and patient. Our routine treatment consists of hot baths, sulphur-vapour, the douche, and galvanism. After six or eight weeks it often happens that nothing remains to remind the patient of his old enemy beyond some slight weakness or soreness of the limb, and I usually advise him to try a week's sea-bathing on his way home. In order to accomplish this he should arrive in Rotorua not earlier than September or later than February. We have had some good results in the treatment of cervico-brachial neuralgia. An interesting case is detailed in the Year-book of 1893.

A man about fifty years of age presented himself a few weeks ago suffering from a spasmodic neuralgia of the facial nerve. Any movement of the jaws, as in eating, yawning, putting out the tongue, and even sometimes in speaking, brought on a paroxysm, lasting, fortunately, only a few seconds, but evidently agonizing; in fact, his life was a burden to him. After four weeks' persistent bathing, with iron and arsenic internally (which no doubt he had taken before) he left cured.

Curative effects of Mineral Waters.

To enumerate every ailment in which our thermal springs have proved useful would prolong this paper indefinitely. Suffice it to say that in many cases their healing power has been discovered accidentally. Many women bathing for rheumatism have found themselves cured of chronic metritis and leucorrhœa, and as a result of such cures have proved fruitful after years of sterility. Congestion of the liver, biliary catarrh, with jaundice and hæmorrhoids, have been cured by the acid sulphur waters, which also prove useful as a topical application in ozæna and ulcerated throat. This class of water also tends to reduce plethora and corpulency without prostration, insures healthy action of the skin, and relieves torpor of the bowels.

Ulcerated Throat.

The mention of ulcerated throat reminds me of two most interesting cases which presented themselves recently from the island of New Caledonia. In this island, it appears, chronic laryngitis is common.

The first case was that of a French gentleman engaged in business, whose throat ailment was of long standing. He remained with us a few weeks, used the water of the Priest's Spring as a gargle,

and as a wet compress to the throat at night, and bathed in the same water twice daily. He left perfectly cured.

The second case was a much more serious one. The patient was a French Roman Catholic priest. He attributed his ailment to excessive use of his voice in preaching, teaching, and singing. He had constant cough, his voice was hoarse and scarcely audible, and there was occasional slight hæmorrhage from the laryngeal ulcers. After pursuing for four weeks the treatment described in the foregoing case, he left very much improved, but by no means well. To my surprise, in a few weeks after his departure he wrote to our Resident Engineer, Mr. Malfroy, stating that to his great delight he found himself perfectly cured, and that he could use his voice in preaching and singing as well as ever he did in his life.

Permanent Benefits realised.

During the past eight years my correspondence with patients proposing to come to Rotorua, and with those who have left after a longer or shorter experience of our bath treatment, has been considerable. No fact has struck me more forcibly than this: that patients who have left greatly benefited, but not cured, almost invariably write to say that, after being a short time at home, they realise the benefit they have derived, and, in most cases, they find themselves permanently cured.

It appears that, whatever it is that our patients take into their systems by absorption or inhalation, and whatever may be the influence of change of climate, scene, and occupation, of relaxation and rest, time is required for assimilation, and the true benefit is only realised some time after their return to their former surroundings.

I am glad to find that this experience is not peculiar to New Zealand, but is quite common with those who frequent the spas of Europe.

Massage.

That department of medicine which relates to the discovery and application of remedies to the cure of diseases being known as Therapeutics, it follows that we may appropriately speak of the application of thermo-mineral waters to the cure of diseases as balneo-therapeutics, of massage as masso-therapeutics, and of galvanism as galvano-therapeutics. Now, any one writing in this day on balneo-therapeutics could scarcely afford to ignore the subsidiary agencies of galvanism and massage. I say subsidiary advisedly; since both find their truest value and highest use as adjuncts to bath treatment, bathing diminishing the resistance of the skin to the galvanic current, and by its emollient influence greatly assisting the manipulations of the *masseur*. We hear a good deal now-a-days about massage; there is scarcely a spa in Europe where it is not practiced. Aix les Bains appears to be its headquarters. Some of those who desire to be considered

professors of the art are too apt to represent it as a panacea for all human ills, and so mislead the unwary. It is desirable, therefore, that the general public should get some definite idea of its real worth. The following is what a lecturer on therapeutics at the Westminster Hospital, and examiner in *Materia Medica* to the Royal College of Physicians of London, says about it: "By massotherapeutics I mean the scientific aspect of the subject: massage, that is, simply as a therapeutic agent, and not massage as a means of earning a living, or as a modified form of hotel-keeping. It must be admitted that many people regard massage and all that appertains to it with a good deal of suspicion, and not without reason. The difficulty is, not that massage fails to receive the credit to which it is entitled, but that it is employed in a number of cases for which it is unsuited. No discrimination is exercised, but its use is advocated for all sorts of chronic ailments. This is a grave mistake, and greatly to be deplored. The work is too often carried on by people who know little or nothing about it, and have not mastered even its most elementary details. They regard it as a special system of treatment, whereas, in reality, it is only one of a number of therapeutic agents at the disposal of every physician. They practice without knowledge, and often do incalculable harm. It is not pleasant to hear of an aneurism or an ulcer in the stomach being ruptured by the efforts of a too zealous rubber; and such mishaps are not unfrequent. The so-called *masseur* or *masseuse*, who goes about the country armed with a 'certificate,' which is simply a receipt for money paid, is an abomination, and has been the means of bringing a legitimate mode of treatment into disrepute."

For these reasons we have been shy of giving encouragement to unknown persons desirous of practising massage at Rotorua. We have long recognised the desirability of having a thoroughly competent *masseur* attached to the Sanatorium; the difficulty has been to secure the services of a man who has had the necessary training and experience. A trained operator has, however, now established himself here.

Magnitude of Resources.

There are two questions which are perpetually propounded by visitors to Rotorua. The first is usually put in this way: "How is it that the Government of New Zealand does not advertise these springs? Little or nothing is known of them in Australia, or America, or England [or wherever the questioner happens to hail from]. I should not have been here, but that I heard, quite casually, that a friend of mine had been cured here; and if I am cured I shall be able to send you dozens of patients." My usual reply is: "We believe that good medical work will advertise itself, and your remarks confirm the assertion. It is evident you believe in your own advertising power, and so do we. It will be quite time enough to spend money in advertising when we find that our bathing-accommodation

is in excess of the demand made upon it; at present it is barely equal thereto. At the same time our resources are practically unlimited. We have one spring in Ohinemutu estimated to discharge not less than a million gallons daily, which means that it is capable of supplying 10,000 baths daily of 100 gallons each. This is at present running to waste. At Whakarewarewa there is a spring almost, if not quite, its equal. Should the time ever come when these springs are not equal to the demand made upon them we have the Waiotapu Valley to fall back upon, which is surely destined in the future to be the centre of the Thermal-springs District of New Zealand. Immense as our resources are at Rotorua, they sink into insignificance when compared with those of the Waiotapu Valley."

COMPARISON OF THE ROTORUA SPRINGS WITH THOSE OF EUROPE.

The second question usually takes this form: "How do your springs compare with those of Europe?" This is a much larger and more interesting subject. The first fact that strikes the inquirer is this: that cold mineral spas, of high therapeutic value as internal remedies, are abundant in Europe, whereas they are rare in New Zealand. In the Rotorua district our mineral waters are all hot, and more suitable for bathing than for internal administration. It does not necessarily follow that because a water is hot it is unfit for internal use. The water of our Rachel Spring is an admirable dietetic-water for gouty and dyspeptic patients, used either hot or cold; and a spring has recently been discovered at the head of Lake Roto Ehu containing, in spite of its high temperature, a large amount of carbonic-acid gas, which holds in solution a good deal of carbonate of iron. After keeping a sample of this water securely bottled for about three weeks, I sent it to a chemical friend for examination. His report was as follows: "On opening the bottle of 'iron-water' from Roto Ehu I found a good deal of free carbonic-acid gas, the water effervescing briskly like ordinary soda-water; it contained what was equivalent to 172 cubic inches per gallon. Of course this estimate is not to be relied on, as it would only represent a part of the gas contained in the water direct from the spring. There is more iron than I thought would be in it. This most probably exists in the water as ferrous carbonate dissolved in the carbonic acid. It resembles the European water of Pyrmont, with this difference, that it contains more chlorine and silica. As far as I have gone I find the water to contain, in grains per gallon: Chlorine, 11·2; lime (CaO), 12·74; magnesia, 1·177; silica, 10·266; iron (FeO), 1·177—total solids per gallon, 36·560; carbonic acid, 172 cubic inches." This spring has an enormous outflow, and is destined to be of great value in the future both for external and internal use.

The next fact that strikes the inquirer is this: that the thermal springs of the Rotorua district contain a far smaller amount of dissolved salts than those of Europe. The difference amounts to 7 to 1 in favour of Europe. If we take the mean of the total solids in

grains per gallon of the nine springs first enumerated, we find that they amount to 96·51gr. only; whereas if we take any nine European springs at haphazard—say, Vichy, Ems, Baden Baden, Marienbad, Seidlitz, Wiesbaden, Saltzbrunnen, Kreuznach, and Leuk—we find that their dissolved constituents amount to 708gr. per gallon.

Fortunately, the therapeutic efficacy of a thermal spring is not to be measured by the quantity of fixed salts it may contain. It would be a fortunate thing, of course, if we could discover in our district a cold mineral spring like that of Hunyadi-Janos, in Hungary, of which a wineglassful is an efficient aperient; but we can scarcely expect this in a volcanic region like ours. The so-called "chemically-indifferent springs," such as Gastein and Wildbad, in Germany, contain absolutely less mineral matter than our ordinary drinking water. Thus, the New River water contains 2½gr. of solid matter to the pint, the East London Company 3gr., and that supplied by the Hampstead Company 4½gr. Yet these waters cause no apparent effect, whilst the springs of Wildbad, with 3½gr. of salt to the pint, and Gastein with 2gr., are capable of producing therapeutic results mainly due perhaps to the temperature at which they are employed. The chemically-indifferent baths, especially the cooler ones, possess peculiarly sedative effects, not only allaying nervous irritation, but also diminishing vascular excitement, whilst the warmer springs of the same class, being more stimulant, are chiefly used in aggravated cases of chronic rheumatism and rheumatoid arthritis. One important fact has been definitely established by experiment,—whatever may be Nature's secret in the preparation of these remedies, it can never be discovered by science or imitated by art. We must be content, therefore, with the empirical knowledge that certain mineral waters produce certain effects.

There are other salient points of difference between our springs and those of Europe. Our waters contain abundance of silica and silicates, and little or no lime, while those of Europe contain abundance of lime, and little or no silica or silicates. Our district appears to be one in which silica takes the place of lime, the latter being almost a chemical curiosity.

Another curious fact is that hepatic or sulphurous waters, characterized by the presence of sulphuretted hydrogen and free sulphuric acid, as in the case of the Priest's Bath, are abundant here, but absolutely unknown in Europe. The one sole point of resemblance—common not only to Europe and New Zealand, but to all thermal springs in the world—is the prevalence of chloride of sodium (common salt) as a leading ingredient.

The Surroundings of Rotorua.

The Rotorua district enjoys the patronage of three classes of visitors: the tourist, the invalid-tourist, and the invalid proper. The question of common interest to them all is, What have they to do, and what have they to see when they get there? The best thing we can do for the tourist is to provide him with a local guide-book,

and then transfer him into the hands of a guide. The most delightful trip he can take in fine weather—say from December to March—is to join a party, and do the round of the lakes.

Crossing from the old township of Ohinemutu in a steam-launch, he will first visit the Island of Mokoia, in the centre of Lake Rotorua; thence to the beautiful cold spring of Hamarana, one of the most charming picnicking spots in the district; thence through the Ohau Creek into Lake Roto-iti; here he would do well to camp for the night, and spend the following day in exploring the cosy bays and inlets with which the lake abounds, and visiting the hot spring of Manapirua, and the waterfall and hot springs in the neighbourhood of Taheke.

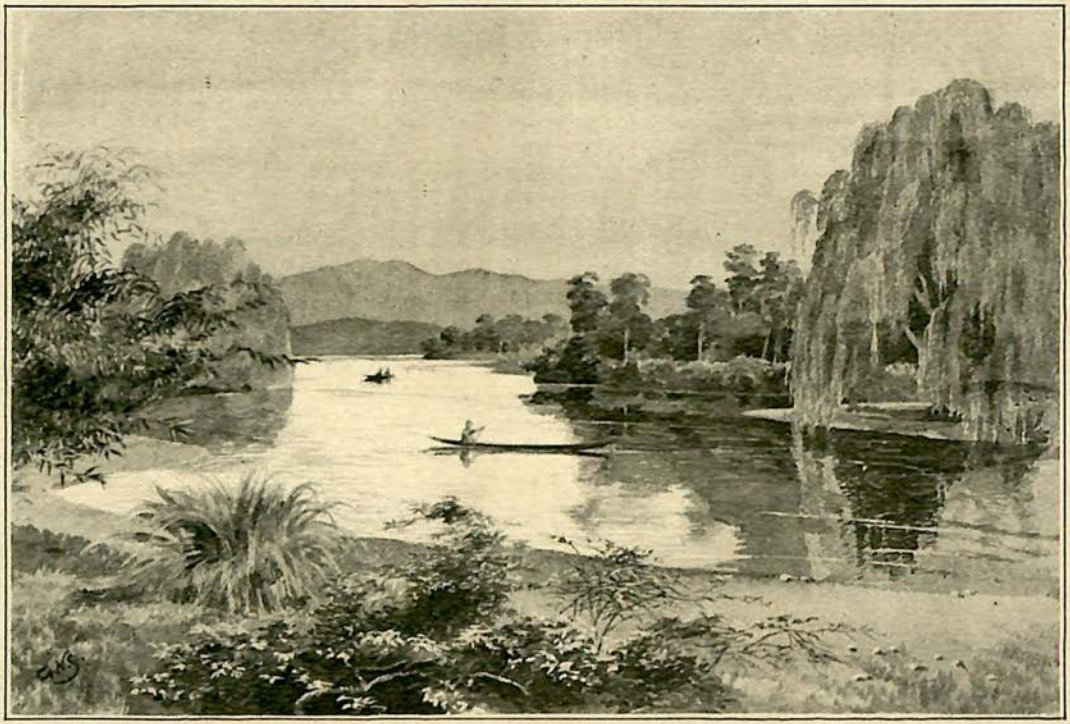
Crossing over to the western shore of the lake, and landing at Tapuaeharuru, a short walk of a mile or two will bring him to Lake Roto Ehu. Crossing this in a canoe, he will find the hot iron spring already alluded to, and may readily convince himself of the presence of iron in the water by attempting to make tea with it, or using it to dilute his brandy.

Another walk of a mile will disclose one of the loveliest lakes in the district, Lake Roto-Ma. The general consensus of opinion is, that this lake is a vision of beauty, which every visitor lingers round as long as possible and leaves with regret. This trip shows the visitor the Paradise of the district: he will find the Inferno at Tikitere. When George Augustus Sala visited this spot some seven years ago, he called it at once "Hell's Gates." It is certainly a most weird and awe-inspiring place. The steam rising from its boiling pools and mud-geysers is a never-failing landmark seen from every point of the Rotorua basin. The hydro-thermal action is so powerful at this spot that the visitor feels the earth vibrating under his feet; and yet, in spite of these dismal horrors, invalids—ladies even—will spend weeks here in order to get the benefit of the healing springs, which are justly credited with many most remarkable cures. Tikitere is eleven miles from Rotorua, and the trip may be comfortably made in half a day.

The next point of interest for the tourist is the Wai-o-Tapu Valley, distant from Rotorua some twenty miles. Leaving his hotel after an early breakfast, say at 7 a.m., the visitor may see the chief points of interest in the valley, and return in time for dinner at 6 p.m., but only to regret the inadequacy of a one-day's visit to fully inform himself of the wonderful resources of this remarkable district.

Tarawera.

Perhaps there is no more enjoyable trip for the young and strong than the journey to Tarawera Mountain, the scene of the eruption on the 10th of June, 1886. A ride of ten miles on horseback brings the visitor to the buried village of Wairoa; thence a voyage by boat some nine miles, across Lake Tarawera, lands him at the foot of the mountain. The ascent will occupy an hour and a half, and having



Hamurana Stream, Lake Rotorua.

arrived at the summit, he cannot but feel well rewarded for his toil. No verbal description can possibly convey an adequate idea of the scene of devastation and desolation which this standpoint reveals.

The best advice we can give to the invalid tourist is to attend to business first and pleasure afterwards. If he really wishes to derive benefit from the hot springs, he must not bathe irregularly on the advice of Dick, Tom, and Harry; taking a long fatiguing journey one day, and possibly three hot baths the next, and then wondering how it is that he feels so limp and exhausted: this kind of thing will only disappoint him, and do no credit to the springs. He may very well spend the first three weeks of his visit in bathing systematically, filling up his intervals of leisure by visiting places of interest near his hotel or boarding-house—and there are many, though usually neglected because they are so easy af access.

The Rotorua Basin and its surroundings.

Not one in twenty of the visitors staying at the Lake House Hotel takes the nearest route across the Pukeroa Recreation Reserve to the Government baths; and yet from this spot a most magnificent panoramic view of the whole Rotorua basin, 80,000 acres in extent, may be obtained. Standing on the highest point, and looking towards the north, the visitor sees spread out before him the tranquil beauty of Lake Rotorua—20,000 acres of water, with the lofty volcanic island of Mokoia in its centre. The lights and shadows on the surrounding hills, the cloud scenery reflected in the water, the white cliffs to the north and north-east gleaming in the sunlight, the steam column rising from Tikitere, the bluff of Wahanga—the most northerly point of the Tarawera Range—just peering above the intervening hills, and in the foreground the Maori village and the English Church on a promontory jutting into the lake, form a picture which would certainly delight the artist, who usually sees when he looks, if not the tourist, who too often looks without seeing. Turning to the south and south-west, I know of no prospect more lovely on a calm summer's evening at sunset. The steam columns of Whakarewarewa are thrown into relief by the dark background of hills, and through the Hemo Gorge a glimpse is caught of the deep blue Paeroa Ranges in the extreme distance. In the west is the bold bluff of Paparata, with its sky-line clothed with forest, through which the setting sun throws a flood of crimson light, making it look like a veritable bush on fire. North of west is the Ngongotaha Mountain, rising 1,600ft. above the level of the lake, from the summit of which may be seen on a clear day the Bay of Plenty, with its numerous islands, and inland the snow-capped mountains of Ruapehu and Tongariro.

Whakarewarewa.

At Whakarewarewa, only two miles from Rotorua, the visitor will find an epitome of all that the neighbourhood contains; hotel and bathing-accommodation, geysers, hot springs, boiling pools, mud

volcanoes, hot waterfalls, and siliceous terrace formation. It will interest the visitor to know that in our Thermal-springs District exist the only geysers in that British Empire on which the sun is said never to set. Geysers are found in the Yellowstone Park, in Iceland, and in Thibet. Of the latter we know very little; but geologists tell us that, of the geysers of the world, those of the States of Wyoming and Idaho are the oldest, those in New Zealand the next in age, and, strange to say, those of Iceland, with which most of us were first acquainted, the youngest.

It will be seen, therefore, that the invalid tourist has plenty to interest him close at home, without interfering in any way with a profitable use of the numerous hot springs at his disposal.

The Geyser at Orakeikorako.

This geyser broke out in June, 1893, and occasioned a profound sensation in the district. Those who have seen it declare it to be the most wonderful and astounding phenomenon in New Zealand, and, for power and grandeur as a geyser, second to none in the world. It has been very appropriately named "the Terrific." The Government, on hearing of the outbreak, commissioned our Resident Engineer, Mr. C. Malfroy, to visit and report upon it. To give his report *in extenso* would occupy too much space, but that portion of it which describes the route to be taken in order to reach it, and the eruption he witnessed, will be read with interest:—

Mr. Malfroy's Report to the Surveyor-General, dated 15th July, 1893.

Re *Geyser at Orakeikorako.*

Sir,—I have the honour to report that on receipt of your telegram of the 8th instant I took immediate action and made arrangements for the journey, leaving Rotorua on the 11th for Ateamuri in a buggy, with a Maori to act as guide and interpreter. We arrived in the evening, slept there, and at 7 a.m. on the 12th we started for Orakeikorako on horseback.

We followed the Taupo Road for about two miles and a half, when we turned off to the left into a gully, following a Maori track for about three miles, which took us to the western bank of the Waikato River. This we followed up for about four miles, reaching Orakeikorako at 9.30 a.m. The track is by no means bad, but it is very narrow, overgrown with tussock-grass and manuka on each side, and cut down deeply by traffic and rain. This renders travelling very slow. It could, however, be made into a good horse-track at a small cost; but from information gathered I am led to believe that a shorter and a more attractive and interesting road could be made to Okakeikorako by following the south-west bank of the Waikato all the way from Ateamuri. It would pass by the Rainbow Falls and the several rapids of that part of this beautiful river, and open up a country which, judging from the abundance of tussock-grass, should be well adapted for general grazing purposes.

The Geyser is situated on the Tutukau East Block, on the south-west bank of the Waikato River, about 10 chains from the said river, and the same distance in a northerly direction from the nearest whares of the native village. It is at the foot of a clay-bank and the upper end of an old silica terrace formation of a light salmon-colour, two or three acres in extent, and reaching down to the river-bank. It is fifty yards in a north-west direction from the old *ngawa* known as the Orakeikorako Pool, which latter has become quiescent since the abnormal eruption of the geyser started, about the middle of June last. The

actual geyser spring consists of an oystershell-shaped basin, 12ft. to 15ft. long and 6ft. to 8ft. wide, starting from nothing at the outer edge to about 5ft. deep at the geyser end, with two well-defined apertures, one a vertical hole, about 12in. in diameter, now blocked up with two large stones silicated fast into it; the other is an horizontal fissure, 18in. long by 4in. or 5in. wide, emerging into the vertical hole almost at a right angle at a depth of about 4ft. below the level of the terrace formation, and just above the obstruction of the vertical geyser-pipe.

The Native ferryman, Watene, told us on our arrival that the last eruption took place at about 4 o'clock a.m., and that it would play again about noon. Arriving at the geyser basin at 10 a.m. we found it full, and the water flowing out gently through an old drain cut in the silica formation years ago, into a second basin, which has also gone cold since this new geyser action started, and the water of which seems to leak out during the period of the geyser's quiescence. This outflow continued for an hour and a half, increasing gradually. The water in the geyser basin then began to boil up, first slowly, then more and more fiercely, for about half an hour, when the first phase of the eruption started. The steam or eruptive force coming out of the side fissure, heretofore described, with great force, ejected the water from the geyser basin, part of which ran back into the basin, to be re-ejected repeatedly by the force, thus causing a great commotion of the water and loud thudding noise as the water and steam battled together. This lasted for about fifteen minutes, when the eruptive force had cleared all the water out of the basin, throwing it in a parobolic spray to a distance of over 2 chains. Then the second phase of the eruption started, consisting of a jet of superheated steam and water of a bluish-purple tint, into which I could not thrust a pointed stick. Emerging from the fissure, and striking against the projecting rock, it was lifted up at an angle of about 45° degrees, throwing a fine spray for a distance of fully 3 chains. The immense force with which the steam is ejected against the rock and its sudden expansion as it emerges from the fissure cause a terrific roaring noise, which can be heard at a considerable distance. It was with the greatest difficulty we could hear each other speak in the vicinity of the geyser. This second phase continued for over an hour, the pent-up force dying away gradually, the water, falling back into the geyser basin, re-entered and disappeared in the fissure, and the geyser action stopped altogether. We could then see in comfort the apertures hereinbefore described. The edges of the fissure were blackish brown, smooth on the inner side, but there was no sign of volcanic heat, or fire, no glassy formation, though the Natives say that sixteen months ago tongues of flame were seen by them issuing from the orifice. We only saw one eruption, but Watene says that they are all similar, and take place at intervals of about six hours, with two to two and a half hours' duration, thus giving about three eruptions in the twenty-four hours.

Having seen "Pohutu," "Wairoa," the "Crow's Nest," and "Wairakei" geysers, also the blow-hole at Karapiti, in action, I have no hesitation in saying they sink into insignificance when compared with the "Terrific" of Orakeikorako (which is the very appropriate name given to it by Mr. R. S. Thompson, who first saw and described it).

For some months past this geyser has been quiescent. It is anticipated that a wet season, with a rise of the Waikato River, will render it active again.

ACCOMMODATION.

The opening of the Auckland–Rotorua Railway, which took place in December 1894, found Rotorua totally unprepared for the greatly increased traffic. From December until the end of March the hotels and boarding-houses were filled to overflowing, and visitors had to be lodged in tents. A list of the hotels and boarding-houses now open, with the number they are able to accommodate respectively, may be interesting.

HOTELS.

The Grand	70
The Geyser	50
The Palace	40
Lake House	60

BOARDING-HOUSES.

Bathgate House	60
The Langham	20
Tarawera House	20
Lake View	20
Mokoia View..	20
Mrs. Morrison's	22
Total	382

The tariffs vary from 25s. weekly. It is difficult to get an accurate estimate of the number of visitors for the past year. The hotel returns are very unreliable, as visitors move from one house to another, and so get counted twice over in many cases; but the fact remains that the amount of our bath fees for December, January, February, and March last was very much greater than for the corresponding months of any previous season, showing that our invalids at least have increased accordingly. The returns of baths taken show 23,196 for the year ending March, 1895, as against 17,032 for the previous year. During the year ending March, 1896, the number of baths taken was 28,906.

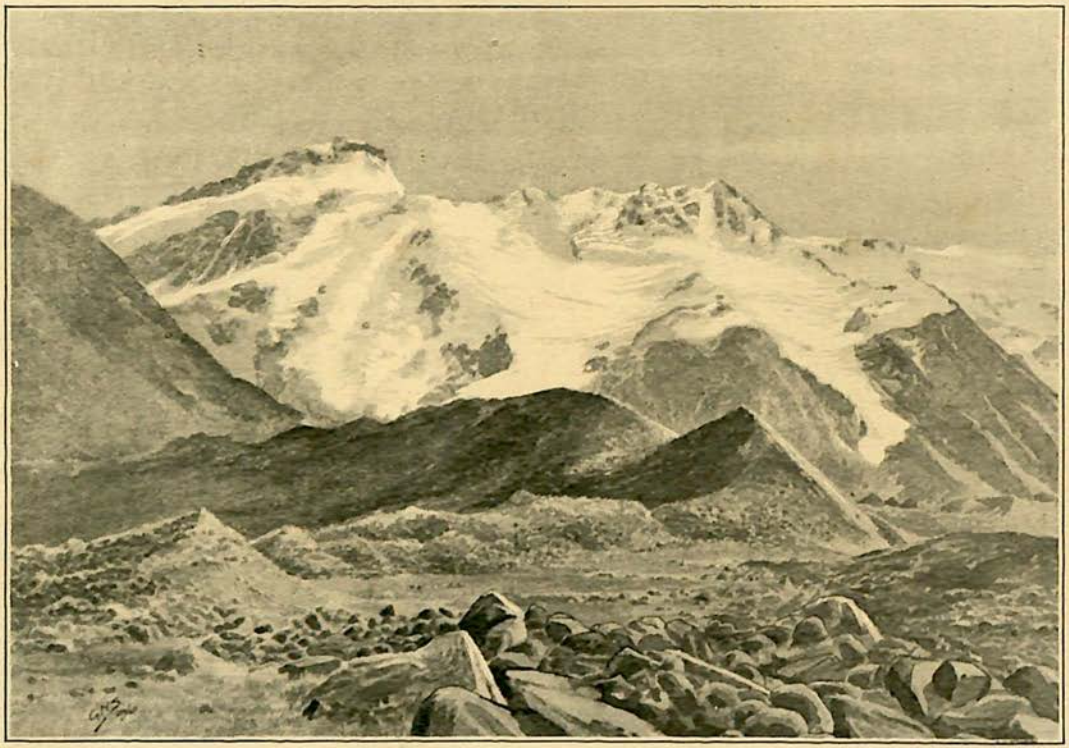
ROUTES FROM AUSTRALIAN COLONIES.

The most direct route for visitors from the Australian Colonies is from Sydney to Auckland, and thence by rail to Rotorua. Those who may desire to see something more of the country may take steamer from Melbourne to the Bluff, and from thence on to Wellington, continuing the journey overland to Rotorua—a four days' trip, most enjoyable in fine weather. Patients should be recommended to bring plain, warm clothing, and substantial boots and shoes. Rotorua is essentially a convenient place for the wearing-out of old clothes. Frills and furbelows, jewellery and valuable watches, had better be left at home, as they are not improved by the sulphurous vapours arising from the springs. The watch *par excellence* for Rotorua is the nickel-plated "Waterbury."

A SCENIC WONDERLAND.

By MALCOLM ROSS.

THE traveller desirous of seeing New Zealand scenery in all its varied grandeur and loveliness will, at no distant date, be able to commence his tour at the West Coast Sounds, work his way overland *vid* McKinnon's Pass to Lakes Te Anau and Manapouri, proceed



Mount Sefton (10,359ft.), Southern Alps, Canterbury.

thence to Wakatipu and Wanaka, then on to Mount Cook and over one of the glacier passes to the West Coast, returning eastward *vid* the Otira Gorge to Christchurch. A tour on these lines will, with the formation of good roads and tracks in some of the roughest parts, be easy of accomplishment, and embrace the principal scenic features of interest in the South Island. At present such a journey is impracticable, except in the case of mountaineers, or, at all events, good walkers; but the points mentioned may be all reached in different ways in comparative comfort.

West Coast Sounds.

Beginning in the South, we have the far-famed West Coast Sounds, no fewer than thirteen in number, all lying within a distance of 120 miles on the south-west coast of the South Island of New Zealand. The best way of visiting the Sounds is by the annual excursions, so well carried out each summer by the Union Steamship Company of New Zealand. Every season these excursions, which partake of the nature of a gigantic ten-day water-picnic, are patronised by hundreds of sight-seers from all parts of the civilized globe, and it is safe to say that no such splendid excursion can be enjoyed in any other part of the world. The steamer calls first at Preservation Inlet, thereafter proceeding northward through some of the most beautiful fiords to Milford Sound, the grandest of all. The mountains by which Milford Sound is surrounded are the highest on this coast, the glacier-crowned Pembroke Peak rising almost it might be said from the water's edge to a height of 6,700ft. One of the most noticeable among them is the remarkably-shaped Mitre Peak, the end of a long ridge that runs back from the Sound, and attains in the Mitre its greatest height of 5,560ft. The Lion, a massive mountain on the opposite side, from some points of view closely resembling a lion *couchant*, is likewise a striking feature of the Sound; and the Stirling Falls (500ft. high) and the Bowen Falls (540ft.) are sights worth coming a long way to see. The walls of the Fiord go straight down to tremendous depths, and, except at the head, it is difficult to find an anchorage for ships. In one place, near the Stirling Fall, the soundings show a depth of 214 fathoms. The Rev. W. S. Green, a member of the English Alpine Club who visited New Zealand some years ago, thus refers to his entry into Milford Sound:—

> Vertical cliffs rose for thousands of feet on either hand, and we drove in before a blast so strong as almost to make steaming unnecessary. The surface of the sea would now and then be torn off in sheets, driven along in spindrift, and again all would be calm as glass. Waterfalls, resembling the Staubach, came down the cliffs from far above the clouds, and were blown away into spray while in mid-air by the fury of the storm. Wherever vegetation could get a footing on these immense precipices lovely tree-ferns and darker shrubs grew in profusion, all dripping with moisture, and running up the cliffs in long strips of verdure till lost to our view aloft in the torn white mists. The vivid green of the foliage was the feature of all this wondrous scene which struck me most. Two or three miles up the Sound we steamed close to an immense waterfall which, in one plunge of 300ft., leaped into the Sound with a roar like thunder, drowning our voices and

sending great gushes of spray over the steamer's deck. The face of another great cliff was so draped with numberless small falls that it seemed to be covered with a veil of silver gauze about 300 yards in width. While passing along here we fired a gun: echo after echo resounded from cliff to cliff, and from invisible crags high over our heads the echo again returned as a voice from the clouds. The mist now showed an inclination to clear off, the rain ceased, and as we entered the inner basin of the Sound the forest increased in beauty. The totara pines, draped with festoons of grey lichen, contrasted well with the soft green of the great fern-fronds, and formed a suitable background to the scarlet blossoms of the rata (*Metrosideros lucida*) which here and there lit up the upper surface of the forest with patches of intense colour. Gleams of sunshine began to dart through the clouds, giving a momentary flash on one of the numerous cascades, and then, passing over forest and cliff, added new beauties of light and shade. When about eight miles from the open sea a booming sound rose higher over the voices of the numerous cascades, growing louder as we advanced, and, rounding a forest-clad point, we came upon the grandest of New Zealand waterfalls—the great Bowen Fall. Its first fall is only about 50ft. into a rocky basin, but, leaping from it upwards and outwards in a most wonderful curve, it plunges down with a deafening roar in a single leap of 300ft. The "Te Anau" was allowed to drift up in the eddy caused by the fall, and, being caught by the stream in the midst of drenching clouds of spray, she was spun round as though she were a mere floating twig; then, steaming to a short distance, she stopped again. The weather had now taken up sufficiently for us to see through an opening in the clouds the snow-clad top of Mitre Peak, which rises in one grand precipice of 5,560ft. from the surface of the Sound. The glacier on Pembroke Peak showed for a few minutes, and then was lost to view; but what we saw formed the grandest combination of scenery upon which my eyes had ever rested. As these Sounds are from 200 to 300 fathoms deep, there are but few places in them where a ship could anchor; had we stayed there for the night we should have made the steamer fast to the trees.

The Sutherland Waterfall.

But the attractions of this locality are not exhausted by a visit to the Sound itself. There are other wonders near at hand, and now easily accessible to the tourist. A favourite excursion is the one to the Sutherland Falls, distant from the Sound some thirteen or fourteen miles. Two short stages of the journey are made in boats, but the visitor has to walk the greater part of the distance. Formerly this was rather a serious undertaking for all but accomplished pedestrians, as the original bush track was a very rough one; but a well-graded footpath has been formed all the way to the Falls, and any one capable of walking eight or ten miles on an ordinary road may safely undertake the journey. The accommodation at the end of the day's tramp is, however, of rather a primitive character, and visitors must be content to "rough it," at all events for one night. The Fall itself—1,905ft. high—is more remarkable for grandeur than for beauty, but, in any case, it is well worth a visit, apart altogether from the splendid views of mountain, river, lake, and forest to be seen on every hand during the entire journey.

The Cleddau and Mount Tutoko.

No visitor to Milford should return without taking a stroll for a few miles up the north-west branch of the Cleddau River. The

writer has made an expedition into the hitherto unknown country at the head of the north-west branch of this river, and with Mr. W. J. Hodgkins and Mr. Kenneth Ross, ascended Mount Tutoko—the highest mountain in the fiord country—discovering several new glaciers, peaks, and waterfalls. When a track is made and a hut erected at the foot of the Age Glacier, this trip will be an easy one, and very popular with tourists to the Sounds, as an easy day's walk from Milford will take the traveller on to the clear ice of the glacier, which comes down almost to the bush in the valley, only about 1,200ft. above sea-level. The scenery at the head of the valley, which is hemmed in by precipitous glacier-crowned mountains, is very fine, rivalling anything that can be seen in the Arthur Valley or in the neighbourhood of the Sutherland Falls. Indeed, the great majority of tourists will, as soon as facilities are provided, prefer to make this trip rather than the one to the Sutherland Falls. The terminal face of the glacier is only about ten miles from the Sound. We reached it easily in a short winter's day, though we had to carry heavy swags through the trackless forest, and over the great slippery boulders of the river, which for several miles is a roaring torrent, its banks lined with beautiful bush where the kiwi and kakapo and other strange birds find a congenial home. We pitched our tent on the ancient tree-grown moraine of the Age Glacier, and next morning started early on our climb. A certain but somewhat difficult and dangerous route to the summit presented itself up the main ice-stream, but this was abandoned in favour of the safer but more problematical one to the right of the glacier. After ascending some 3,000ft. above the camp we were surprised to see, right above us, a magnificent ice-fall which came from a plateau beyond. Getting above this, an easy way over gentle snow slopes, cleft by great *bergschrunds*, led to the final peak, which we now expected to reach in an hour. Our expectations, however, were not realised, for the upper slopes were very hard, and a great deal of step-cutting was required, while the rocks on the final peak were glazed with ice. The rope and the ice-axes were here in continual use for four hours, and the greatest caution had to be observed. It was not till sunset that the crest of the final peak was reached. The view, as the sun sank in a bank of cloud to the westward, and as, almost simultaneously, the moon rose behind Tutoko, was one never to be forgotten. The aneroid showed the mountain to be over 9,000ft. high. The descent was of a rather thrilling nature, as owing to the shortness of the daylight, we had to spend the night out on the mountain, some 2,000ft. above our camp. The climb is an easy one till the final ice-slope and the last rocks are reached. It is possible, however, that in the summer, when the upper rocks are not glazed with ice, the final part of the ascent may also be comparatively easy, so that the climb may become a popular one with tourists. In any case, the ice-fall may be safely reached by any one who is a fairly good walker.

Overland to Te Anau.

This is a trip which may now be safely undertaken by any one who can walk ten or fifteen miles on an ordinary hilly road, as there are huts at convenient halting-places all along the route. The pass between the Arthur and Clinton Valleys is some 3,400ft. above sea-level; but there is a fairly good path cut through the bush on either side, and ladies have gone from the Beech Huts on the Milford side to the Mintaro Hut on the other side in three hours. The best plan is to make the journey in easy stages, camping the first night out at the Beech Huts, near the Sutherland Falls, the second night in the hut at Lake Mintaro, at the foot of the pass on the other side, the third night in the half-way hut in the Clinton Valley, and the fourth night in the hut at the head of Lake Te Anau. The views all along the route are superb, and the scenery as viewed from the pass, with Mounts Balloon and Hart on either hand, and Mount Elliott and the pretty little Jervois Glacier opposite on the Milford side, is grand in the extreme. Those unused to bush work should secure the services of a guide, and arrange for Mr. Snodgrass' steamer to meet them on arrival at the head of the lake.

The Lakes District.

Next in importance to the West Coast Sounds, but more easily accessible to the tourist, are the lakes of Otago, each having a character of its own. To get to Lakes Te Anau and Manapouri the tourist goes by rail from Invercargill or Dunedin to Lumsden, the next day proceeding by coach to the southern end of Te Anau. Here the scenery is somewhat uninteresting and greatly inferior to what opens out when, the following day, the traveller takes the steam launch to the head of the lake. Te Anau, thirty-eight miles long and one to six miles wide, covers a total area of 132 square miles. It has three western arms or fiords, and numberless islands are scattered over its surface. On either side rise wooded mountains, and in rainy weather countless waterfalls descend into the lake. As one penetrates farther the beauties increase, and at the head of the lake the towering summits, often snow-capped, are most awe-inspiring. Traces of Maori occupation are plentiful at both Lakes Manapouri and Te Anau, and the remains of a kaik are still shown about a mile from the south end of the latter lake. The country around these lakes was once inhabited by a tribe which was exterminated by the northern Maoris. At the head of Lake Te Anau is a hut for tourists, and from thence a track runs up the Clinton Valley, over McKinnon's Saddle, and on to Milford Sound.

Lake Manapouri is reached after thirteen miles' driving along the course of the Waiau, one point of the road—the Horse-shoe Bend—being very beautiful. The area of the Lake is fifty square miles. The mountains around it from 6,000ft. to 7,000ft. high, and the islands in it are richly mantled with luxuriant growth. Above the bush line, as in Lake Te Anau, rise the granite tops of the

peaks, shattered and splintered, and often snow-clad. The two largest islands are named respectively Rona and Pomona. The scenery at the head of the lake, up the Spey River and the Mica Burn, is wonderfully fine, though as yet it is not accessible to the ordinary tourist.

Returning to Lumsden, the traveller can proceed on to Wakatipu, taking train for Kingston, which is reached in the afternoon, and steamer up the Lake to Queenstown. As he nears Queenstown, which is charmingly situated, the mountains become more impressive, and the curious Remarkables, with their double cone, rise towards his right. On the left is Ben Lomond—a favourite excursion. From its summit a magnificent view of mountains and lakes can be obtained. Another trip is to Arrowtown, which lies in an important mining district. Coming back to the Shotover Gorge, the traveller passes through wild and impressive scenery, and many features of interest are here to be noted that recall the early gold-mining days. The road to the Phœnix Mine, at Skipper's, is in many parts hewn out of the solid rock, a precipice above and below. This excursion can be made in a day on horseback from Eichardt's Hotel. The Kawarau Falls, the only outlet of Lake Wakatipu, should also be visited.

Of course, the principal excursion from Queenstown is to the head of the lake. The tourist will find comfortable quarters and a good guide at Birley's, and many interesting journeys may be undertaken. Some of the finest scenery is up the Routeburn Valley to the Lake Harris Saddle, from which a wonderfully grand and comprehensive view is obtainable. Kinloch, Precipice Creek, Diamond Lake, &c., can also be visited from Glenorchy, but *the* expedition to accomplish is the ascent of Mount Earnslaw, which is practicable, in fine weather; by any one who is a good walker and can climb a little. The view from the summit is probably the finest obtainable in Otago. The bottom of Lake Wakatipu is, according to "Murray's Guide," in some places 1,100ft. below sea-level, although the surface of the lake is 1,000ft. above the sea. Large and excellent trout are found in its waters, which are intensely clear, and very pure. Its area is 112 square miles, its length fifty miles, and its breadth varies from one mile to three and a half miles.

Wanaka is said to excel Wakatipu in beauty, but is smaller, being thirty miles long by three miles wide, with an area of 57,000 acres. By means of a steamer that plies on the lake, various excursions may be made—up to the head, to Manuka or Pigeon Island, curious for containing a small lake in its centre, and to East and West Wanaka, from which a fine view of Mount Aspiring can be gained. From Pembroke the tourist may drive to Lake Hawea. Here, on the surrounding ranges, numbers of red deer, introduced from Scotland by the Acclimatisation Society, are doing well. The shooting season is April and May. The foot of Mount Aspiring can be reached in a day's ride, the route lying up the Matukituki Valley.

The Southern Alps.

The Southern Alps of New Zealand, extending in one almost unbroken chain along the western side of the South Island, though not so high as the Swiss and Italian Alps, according to competent authorities, rival them in the wonderful variety and grandeur of their surroundings. In the south the ranges, which run in different directions, are intersected by the West Coast Sounds on the one side and the fiords of the great lakes on the other. The mountains here come in many cases sheer down to the water's edge, with a most luxuriant forest growth in the valleys and on their lower slopes, and tops crowned with perpetual snow and ice; the grandeur of the scenery can scarcely be imagined. Among these ranges there are innumerable peaks, glaciers, and waterfalls, and, to the climber, the mountains in the neighbourhood of Milford Sound offer some splendid rock-work. The Mitre is a bold rock mountain of 5,560ft., rising precipitously from the water's edge, and it seems a moot point whether its final peak is possible of ascent. On the other side of the Sound, Mount Pembroke, capped with a fine glacier, also offers a good climb, while Tutoko, as I have already stated, bears the palm from an alpine climber's point of view. Next in order comes Mount Fosbery, a remarkable rock mountain, clothed in places with glacier and ice-fall, and, from the Milford side at all events, very difficult of ascent. Mount Balloon, too, is a peak almost startling in its majesty, with its 5,000ft. or 6,000ft. of precipices rising sheer from the Arthur Valley. But there are mountains by the score, nay, by the hundred, in this region.

Going farther north, we have another series of fine mountains at the head of Lake Wakatipu—Cosmos Peaks, Mount Earnslaw, Mount Tyndall, Mount Edward, Mount Anstead, and other glacier peaks, all over 8,000ft. high; and when it is remembered that, owing to the lower height of the snow-line and the lesser elevation at which the mountains begin to rise, a peak of 8,000ft. in New Zealand is equal to one of from 11,000ft. to 12,000ft. in the European Alps, it will be seen that there is, even amongst our second- and third-rate peaks, a splendid field for alpine work. Mount Earnslaw, 9,165ft. high—a massive mountain, with glaciers on all sides—is the predominating feature of Lake Wakatipu, and its ascent, first accomplished by the guide Harry Birley, is becoming a favourite one for tourists. Since Birley, and, subsequently, the writer and his brother, made the ascent, an easier route, quite practicable for the gentler sex, has been discovered, and many ascents have been made. The western or higher peak, however, is still unclimbed. Proceeding still farther north, we find the mountains increasing in height. Mount Aspiring, at Lake Wanaka, culminates in a fine peak, all but 10,000ft. high, which rises majestically from a great glacier basin. Then come Castor and Pollux, and beyond them a long chain of alps, stretching away to where Mount Cook or Aorangi towers majestic, his snowy triple peaks 12,349ft. in air. At Mount

Cook we are in the midst of the grandest scenes of the Southern Alps. Formerly it was somewhat of an undertaking to visit this locality; now, two days' coaching from the railway at Fairlie lands the traveller at the Hermitage, a comfortable hostelry at the very foot of Mount Cook. We look out from the drawing-room window on to the ice-seamed sides of Mount Sefton—a glorious peak draped in white glaciers—and we can see and hear the avalanches thundering down. Past Mount Sefton, and not five minutes' walk from the Hermitage, flows the Mueller Glacier, flanked on either side for eight miles by towering glacier-clad ranges, the scenery at its head being remarkably fine. Up another valley, under the great buttresses of Mount Cook, runs the Hooker Glacier, some twelve miles long, curving round to Mount Stokes (10,090ft.), and receiving a number of fine tributary streams of ice from the western slopes of Aorangi—notably the Empress, Noeline, and Mona Glaciers. The ice from the Empress Glacier and the upper portion of the Hooker is very much broken up by pressure while rounding the rocky buttresses just above the Noeline Glacier, and forms a beautiful ice-wall, but one that is, late in the season, very difficult to traverse.

One of the finest views in the district is obtainable from the Sealy Range, at an altitude of about 8,000ft. I made this excursion in 1890 with Mr. T. C. Fyfe, of Mount Cook fame, and we were charmed with the view. Immediately below us the Metelille Glacier curved gently down for some distance, and then poured its ice in one great mass into the Mueller, which, broken and crevassed, flowed northward in a gentle curve 5,000ft. below us. From the source of the Mueller the eye swept round the peaks and glaciers of the Moorhouse Range to Mount Sefton, rearing his ice-seamed sides 10,000ft. in air. Then the fine peak of Mount Stokes, far away at the head of the Hooker Glacier, and the glistening snows of St. David's Dome, came into view, while down from their bases flowed the Hooker Glacier itself, swollen with the tributary ice-streams from the long southern *arete* of Mount Cook. Over the great rocky ridge of Mount Cook, on the Tasman side, appeared the bold form of Mount Haidinger, with his fine glaciers robed in shadow, save for a little patch of gleaming white on the western slope. Then came Mount De la Bêche, with the white cones of the Minaret Peaks high above all the glaciers. Still further afield was the beautiful Elie de Beaumont, flanking the north-western side of the Tasman Valley, and just beyond it the Lendenfeld Saddle and the white mass of the Hochstetter Dom terminating the valley. From the latter came the great *mer de glace* of the Tasman, plainly visible for eighteen miles, down past Elie de Beaumont, curving round between De la Bêche and Malte Brun with a majestic sweep, then flowing in a straighter line past Mounts Haidinger and Haast, receiving tribute from glacier after glacier till it stopped far down the valley, melting slowly, and issuing forth in another form the Tasman River. Flanking it to the eastward was the Malte Brun Range, steep and rocky; and beyond that, in the hollow between that and the Liebig Range, lay

in dim shadow the Murchison Glacier. What a glorious panorama of mountain scenery it was! Numbers of peaks, from 8,000ft. to 12,000ft. high, and between forty and fifty glaciers, were in sight at one time; while right in the midst of it all rose the dark buttresses of Aorangi, pile on pile, the final snow peak, 12,349ft. high, gleaming in the setting sun.

Many fine glaciers and peaks in the Southern Alps are as yet even unnamed, and, as Mr. Green has put it, there is, in the neighbourhood of Mount Cook alone, work for a whole generation of climbers. Future mountaineers will not have to contend against many of the difficulties which the pioneers have encountered, for the Government is now awakening to the fact that the scenery is one of the best assets which the colony possesses, and is spending thousands of pounds in forming roads and tracks, so that the chief points of interest will be easily accessible to tourists, who are coming in increasing numbers every year from all parts of the world. With the facilities that at present exist for travel, it is a wonder that more of the English alpine climbers do not come out to New Zealand. There is certainly here a splendid field of virgin peaks which the best among them need not deem unworthy of his prowess.

The fauna and flora, too, of the New Zealand Alps are extremely interesting. The kea, a mountain parrot with a surprisingly powerful beak, of which, curiously, the upper mandible is jointed, has his home in these fastnesses. He is much dreaded by the runholder because of his liking for the kidney fat of the sheep, to obtain which he settles on the back of the unfortunate animal and tears away wool and flesh till the desired dainty is reached. The weka—one of the New Zealand wingless birds—is quaintly interesting, if only for the intense curiosity it evinces in the doings of the "featherless biped." In more southern latitudes are found other strange birds, such as the kakapo and the kiwi. There are many other birds likewise to be met with, interesting alike to the naturalist and the sportsman.

At Mount Cook the flora is particularly beautiful and interesting. In the sub-alpine glens numerous berry-bearing plants abound, while in favourable spots the alpine vegetation is varied and luxuriant. There are several kinds of ranunculas, and a bewildering variety of celmesias, gentians, and senecios also flourish. Among the rocks, at higher altitudes, the eidelweiss, differing but slightly from the Swiss variety, grows in profusion.

Equipment.

The visitor to New Zealand who is desirous of going beyond the verge of civilisation is often puzzled as to what he should take with him in the way of equipment, so a few hints may not be out of place here.

For the Sounds trip, fairly strong and easily-fitting boots are a *sine quâ non* if the tourist intends to visit the Sutherland Falls, the Cleddau Valley, &c. Long thin gloves and an ample veil are also

necessary in the summer time to ward off the attacks of the myriads of sandflies, which under some circumstances make life in the Sounds almost unbearable.

Referring generally to the question of outfit for travelling amongst the mountains, let us consider first the question of clothes. These should be made entirely of wool. A tweed knickerbocker suit with Norfolk jacket, flannel shirt, and fairly thick stockings will be found most serviceable. The lining of the pockets should be also of wool. A Norfolk jacket without the pleats is preferable to the ordinary kind. It should be well supplied with pockets made with flaps to button, one or two being lined inside with mackintosh. Boots should be fairly strong in the uppers, and have stout projecting soles nailed with clinkers at the edges and hobs in the middle. It is difficult to get the proper nails for alpine work in New Zealand, though nails that answer the purpose fairly well are obtainable in Christchurch and Timaru. Enough nails for one pair of boots and some to spare can be got from Switzerland by sending a post-office order for 6s. to Ulrich Almer, Guide, of Grindelwald. An ice-axe, alpine-rope, sleeping-bag, smoke-tinted goggles, knitted anklets or gaiters to keep the snow out of the boots, and woollen gloves, are also necessary if any real alpine work is contemplated. A Whymper tent, *i.e.*, one with a waterproof floor sewn into it, will be necessary for the more arduous expeditions. On the overland track to Milford Sound a tent need not be taken, as there are huts along the track; but blankets and provisions will have to be carried. A pair of rubber-soled gymnastic shoes are a great comfort in camp after a day's march. In Dr. Claude Wilson's excellent little book on mountaineering will be found a packing-list, which will serve to remind travellers of what it is necessary to provide themselves with. Much valuable information will also be found in the Badminton Library volume on "Mountaineering," by Dr. Clinton Dent and others. It will be well for the tourist, however, to remember that in New Zealand there is often difficulty in securing porters, and in thinking of his own back he will no doubt see his way to do without many of the items enumerated by these writers.

The following are some of the principal books and pamphlets dealing with the sounds, lakes, and alps of New Zealand. Many of the works mentioned are out of print, but nearly all can be seen in the public libraries of the colony :—

NEW ZEALAND ALPINE LITERATURE.

HAAST, Sir Julius von.—"Geology of Canterbury and Westland"; *Times* Office, Christchurch, 1879. Contains geological maps, coloured and plain, and illustrations from photographs by E. P. Sealy; both printed at Vienna.

HAAST, Sir Julius von.—"Head Waters of the Rakaia"; *Press* Office, Christchurch, 1886. Contains twenty illustrations.

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HECTOR, Sir James.—"Geological Expedition to the West Coast of Otago"; *Otago Provincial Government Gazette*, 5th November, 1863. With sketch-map.

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LENDENFELDT, R. von.—"Ascent of Hochstetter Dom"; *Canterbury Times*, 14th April, 1883; *Australasian*, 5th May, 1883.

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GREEN, Rev. W. S, A.C.—"Fels- u. Gletscherspuren am Mount Cook in Neu-Seeland"; *Peterm. Mitt.*, 1883, p. 53.

HINGSTON, J.—"The New Zealand Sounds"; *Victorian Review*, viii., 622–38, September, 1883. Also pamphlet, "Seeing the Sounds," obtainable from the Union Steamship Co., Dunedin.

HUTTON, F. W.—"Sketch of the Geology of New Zealand"; abstract, in *Nature*, xxxi., 305, 1885.

HUTTON, F. W.—"Report on the Tarawera Volcanic District"; Government Printer, Wellington, 1887.

GEIKIE, Sir Archibald.—"Tarawera Eruption"; *Nature*, xxxiv., 320–22; *Contemporary Review*, October, 1886, pp. 481–92.

SMITH, S. Percy.—"The Eruption of Tarawera"; Government Printer, Wellington, 1886.

MANNERING, G. E.—"With Axe and Rope in the New Zealand Alps"; Longmans, Green, and Co., 1891. Illustrated.

MCHUTCHESON, W.—"Camp-life in Fiordland: A Tale of the Sutherland Falls"; Government Printer, Wellington, 1892. With map and illustrations.

ROSS, Malcolm.—"Guide to the Lakes of Central Otago"; Government Printer, Wellington, 1889. Map and illustrations.

ROSS, Malcolm.—"Aorangi: or, The Heart of the Southern Alps, New Zealand;" Government Printer, Wellington, 1892. With maps and illustrations.

ROSS, Malcolm.—"The West Coast Sounds of New Zealand: An Account of a Trip in the Union Company's s.s. 'Tarawera'"; J. Wilkie and Co., Dunedin, 1893. Numerous illustrations.

"Maoriland: An Illustrated Handbook of New Zealand"; published by the Union Steamship Company of New Zealand, 1884. Articles by Rev. R. Waddell, M.A.; A. Wilson, M.A.; and T. W. Whitson. Maps and illustions.

"Report of the Survey Department of New Zealand"; Government Printer, Wellington. Recent numbers contain interesting articles by T. Mackenzie, M.H.R., T. N. Brodrick, E. P. Harper, and others, regarding mountain exploration.

"New Zealand Alpine Journal"—Nos. 1 to 7; Whitcombe and Tombs, Christchurch. Various articles by members of the New Zealand Alpine Club.

PART IV.—DESCRIPTION OF LAND DISTRICTS.

THE AUCKLAND LAND DISTRICT.

By G. Mueller, Chief Surveyor.

Introductory.

The Auckland Land District covers about four and a half degrees of latitude, extending from 34° 30′ to 39° S., its greatest length being about 365 miles, from the North Cape to the 39th parallel, south of Lake Taupo, while its greatest width is about 180 miles. In the peninsula north of Auckland, indented as it is on either side by harbours and arms of the sea, and with a mean width between the Pacific Ocean and Tasman Sea of little over forty miles, the range of temperature is remarkably small. The thermometer seldom registers above 80° in the shade in the middle of summer, whilst the heat is always tempered by a cool breeze, bringing the mean summer temperature to under 70° in the shade. The frosts are hardly worth mentioning, as the minimum register is seldom below 40°; but south of Auckland sharp white frosts occur very often, more especially beyond 38° of latitude, and snow lies upon the summits of some of the highest hills or mountains in winter.

Physical Features.

This land district may be said to have no real mountains, as the most prominent peaks of the several scattered ranges or hills seldom exceed 3,000ft. in height above the sea-level, an altitude just enough—south of 38°—to clothe the last 1,000ft. with snow in the depth of winter. North of Hokianga and the Bay of Islands there is one well-defined range of hills rising to a height of 2,463ft.; whilst south of these places, and extending to the Wairoa River on one side and the Whangarei Harbour upon the other, the country is all more or less broken into ranges from 1,000ft. to 2,000ft. in height, with valleys between. The next really well developed main range lies within the Coromandel and Thames Peninsula. With a length of over 150 miles, it has an average height of over 2,800ft., commencing with Moehau, or Cape Colville, 2,800ft.; next, Te Aroha, a peak of 3,176ft.; and ending at Weraiti with a height of 2,527ft. There are two other well-defined ranges—namely, Tawairoa and Hauturu—lying between the West Coast and the Waipa basin, with their highest peak at Pirongia, which rises to 3,156ft., and is often snow-capped. There are other ranges forming the watershed between the basins of the Waikato and Waipa Rivers, and dividing both from the streams running into the western side of Lake Taupo. Their highest peak is Pureora, rising to 3,793ft. The eastern side of the land district is occupied by a very broken, forest-clad country, known as the Urewera Country, the average height of which is about 2,500ft. It is practically unexplored, and, being still in the hands of the Natives, is not as yet available for settlement. To the east of Lake Taupo lie the Kaimanawa Ranges, of about 4,500ft., and generally open on the ridges, with valleys clothed in beech forests. Nearly the whole of the Auckland Land District is indented on both coasts with harbours and arms of the sea, forming a cheap and easy means of access. Of rivers, properly so called, there are only two of any great length—namely, the Wairoa and Waikato. The first empties itself into the Kaipara Harbour, a large arm, or rather succession of arms, of the sea, giving hundreds of miles of inland water-carriage to all parts of the Counties of Hobson, Otamatea, Rodney, and Waitemata. This river is navigable from its mouth to its junction with its tributaries Wairua and Mangakahia, a distance of ninety-one miles from the sea,

and for forty miles it is navigable for ships of large burden. The River Waikato has a course of 200 miles, measured from its source in the Ruapehu Mountain through Lake Taupo to the sea on the West Coast. It is navigable for river-steamers for seventy-five miles from its mouth. Another river—the Thames, or Waihou—though of no great length, affords a valuable means of inland water-carriage, and is navigable for small steamers for twenty-five miles. Generally speaking, every part of the district has an abundant water-supply, now and then lessened for a short time at the end of a very dry summer.

Plains.

Of plains proper, this district has only the stretch of country called Kaingaroa, extending from the eastern side of Lake Taupo towards the Bay of Plenty, all more or less of a pumice formation; the valley of the Thames, which is generally level, the quality of the soil varying very much in different parts; and the Central Waikato basin, already thickly settled. Here and there in the North there are level plateaux of volcanic soil, more or less densely wooded, and along the main rivers there are stretches of level country, but there are no large plains of alluvial soil such as the South Island can show.

Lakes.

Of these, which add so much to the scenery of a country, this district possesses a fair share, there being eight principal lakes, with some twenty or more smaller ones. To the north of Auckland, in the Bay of Islands district, there is only one lake of any size, called Omapere, three miles by two miles, an old crater. In the Waikato are Lakes Waikari and Whangape, the first six miles and a half long by three miles across, and the second five miles by one mile. These lakes are generally covered with numerous wild swans and ducks, and, being both connected with the Waikato River by navigable creeks, form a convenient waterway for transport of goods to settlers living around their shores. All the remaining lakes of large size are within the watershed of the Thermal-springs District, and are mostly from seven to eight miles long, and from three to six miles wide, except Taupo Moana, the queen of the North Island lakes, which is twenty-five miles long and eighteen miles broad, with a depth of 500ft. The scenery round its western shore is of the most romantic kind.

Forests.

The greater part of the Auckland Land District has been covered in the past with dense forests, which are now fast disappearing under the axe of the settler and being transformed into rich pasture-land. The only really good Crown lands fit for settlement in the North are still all covered with forest, and must be cleared and sown before any returns can follow. The area of forest-land in the Auckland District at the present time is about 1,800,000 acres north of Auckland, and 3,420,000 acres south of it. The forests contain a mixture of trees of all kinds, from the giant kauri to scrubby tea-tree or manuka, but all the bush is useful for building, fencing, and household purposes, or at any rate may be converted into charcoal for sale. Of the giant kauri (the most valuable tree in New Zealand) great quantities, worth as much as £400,000 per annum, are being yearly cut, and exported or used for home consumption. To give some idea of the size of these trees, and the amount of timber contained in them, it is estimated that upon the Crown land to the north of Auckland, in the Counties of Hokianga, Hobson, Bay of Islands, and Whangarei, there are still remaining 498,000,000ft., of a value, as the timber stands, of £1,294,000.

Soils.

With respect to the soils of Auckland, nowhere in New Zealand within such short distances is there such a diversity in the quality—a distance of half a mile often makes all the difference between rich alluvial and barren pipeclay. To the north of the Bay of Islands and Hokianga the lands are chiefly clay and sandstone, with here and there a volcanic area intervening. In and about the valley of the Mangonuiowae River, in the Hokianga County, there is some of the richest

alluvial soil in the district; and, taking the whole Crown land remaining to the north of a line between the Hokianga and Bay of Islands Harbours, the really available good land fit for settlement would be about 40,000 acres. There are large areas outside of this which will carry good grass and feed one or two sheep to the acre, after clearing and laying down in grass; and there is also land highly suitable for fruit-growing. South of Hokianga, and between that place and the Wairoa River, the soil is, generally speaking, very good, being both volcanic and alluvial. Here the Crown has probably 200,000 acres of such land fit for settlement. Immediately south of the Bay of Islands, and extending thence to Whangarei, the soil is, for the most part, clay lying upon sandstone or marl, with alluvial flats in the bottoms of the valleys; but these are, as a rule, very narrow. Within the Puhipuhi State Forest there is an area, say, of 16,000 acres, more or less, volcanic soil, over a large portion of which a fire has run; having been surface-sown with grass, it is now carrying most luxuriant pasture. Approaching Whangarei, at Hikurangi, the limestone crops out, overlying coal-deposits, and round Whangarei itself the soil becomes a rich volcanic, in a high state of cultivation. South of Whangarei Harbour, and from thence to Auckland, the Crown lands generally are of a broken character, with soil varying from alluvial swamps—as in the case of the Tokatoka Swamp of 16,000 acres– to the limestone areas round Maungaturoto, the sandstone and clay lands of Rodney County, and the poorer clay-lands lying north of the City of Auckland, which have, however, proved eminently suitable for fruit-growing.

For about 200 miles south of Auckland the land (with the exception of the Cape Colville Ranges) is, generally speaking, far less broken, and gradually opens out into large tracts of level country in the Waikato and Waipa basins. Immediately south of Auckland the soil is rich volcanic until it is gradually superseded by the prevailing clays; the greater portion of Manukau County, for thirty miles south of Auckland, may be classed as pastoral, and is under occupation as such. The Crown areas available for settlement—say, 16,000 acres—are chiefly in the Otau Parish, varying from volcanic clay to ordinary clay land, forest-clad, and well adapted for pastoral purposes. In the Counties of Waikato, Raglan, Waipa, Piako, West Taupo, and Kawhia, there is a still greater diversity of soils; Raglan County contains large areas of good limestone country, broken, but with rich black soil, and carrying most luxuriant grass. The lower Waikato country consists of clay soil and extensive swamps, almost undrainable, but at a distance of eighty miles from Auckland is found a flat and undulating country, lying partly within the Waikato and Waipa basins, and partly within the valleys of the Piako and Waihou Rivers, formed mainly of alluvial deposits of rhyolite sands brought down from the volcanic districts. In the Kawhia County there are some 300,000 acres of excellent limestone land, a large portion of which is heavily timbered, with numerous warm valleys. Most of this land is now being acquired by the Government from the Native owners. Beyond this there is a large stretch of country consisting alternately of open valleys and forest-clad hills, a fair proportion of which is good land, both pastoral and agricultural. The County of Coromandel, with portions of Thames and Ohinemuri Counties, is chiefly devoted to the mining industry. The soil is nearly all clay, the land very broken, but suitable for pastoral purposes if cleared of the dense forest that now covers it. The western portion, however, of the Thames and Ohinemuri Counties contain large areas of alluvial and swamp lands, now in the hands of the Crown, but, through want of drainage, not yet available for settlement.

In the County of Tauranga, the clay lands extend from Te Aroha Mountain to Katikati entrance, changing, near Tauranga, to sandstone and black pumice soil of rich character, which improves towards Te Puke and Maketu, where the land is all good, and more or less volcanic. In Whakatane County there are very extensive swamps, of which large portions are drainable, and back from the coast seven miles or so are large areas of Crown lands, broken and forest-covered, open for settlement. The soil is chiefly clay or light loam, with alluvial flats in the valleys, and all well watered. This kind of country extends to the boundary of the land district. The coastal lands are nearly all alluvial flats in a high state of cultivation, and the settlers mostly well-to-do.

Review of Soils: Uses and Returns.

Briefly to set forth the capabilities of the Crown lands in the district, it will suffice to say that north of the Bay of Islands and Hokianga the land is suitable chiefly for two classes of persons—the gum-digger, and the fruit-grower or small farmer. The former has the range over large areas of Crown lands upon paying a small fee, and his earnings average from 5s. to 10s. a day. As for the latter, in and around Hokianga, with its 250 miles of water-frontage, almost anything can be grown, from the tropical banana to the more prosaic potato, whilst oranges and lemons flourish side by side with all kinds of apples, pears, and plums. Wheat does fairly well, and maize gives a return of 50 to sixty bushels an acre. Sheep also thrive; and most of the lands, when properly grassed with artificial grasses, will carry two or three sheep to an acre, but ordinary rough-grassed lands only one and a half to two sheep per acre. The clearing of forest-lands, ring-fencing and grassing them, will cost about £3 to £3 10s. per acre. The same remarks apply to the Bay of Islands and Whangarei, and to the country as far south as Auckland. Round about Whangarei district, and under similar conditions of culture, the average return for good agricultural or pastoral lands would be fully 12s. an acre per annum. South of Auckland, throughout the Waikato, Piako, Waipa, and Raglan Counties, and thence south to the district boundaries, the land is both agricultural and pastoral. All the cereals do well, wheat averaging 27 to 30 and up to 40 bushels per acre, and oats 30 bushels per acre. Potatoes average from 5 to 7 tons per acre. Dairy-farming is carried on, yielding (upon well-cultivated farms) a net profit of 15s. to 20s an acre per annum; whilst sheep-farming yields a profit of from 5s. to 7s. 6d. a sheep per annum on very large estates; allowing for greater losses from disease, &c., the average return would still be 4s. per sheep. The cost of clearing fern and scrub is generally from 7s. to 10s. an acre, and laying down fern-land by surface-sowing and harrowing, about 17s. an acre.

The seaward counties of Tauranga and Whakatane are both agricultural and pastoral, growing wheat and maize alike to great perfection. In fact, the County of Whakatane, upon its alluvial shores and uplands, grows the greater portion of the maize produced in the district, and from the ports of Whakatane and Opotiki in one year some 34,000 sacks have been exported. In these counties the average yield of wheat is from 22 to 25 bushels per acre, oats about 29 bushels per acre, and maize 45 to 60 bushels per acre. It is quite possible within this district to select land early in the winter, fell and burn off by the ensuing summer, sow in grass in the autumn, and put on stock within twelve months from selection.

Rainfall.

The rainfall during the year averages about 39in., the greater portion of which, as a rule, falls between the 1st of May and 1st of November, or during the winter and spring months. Owing to the constant changes of wind, caused by the configuration of the coast-line, the shortness of the distance between the two coasts, and the influence, greater or less, of the trade-winds, it is quite common for one neighbourhood to have double the rainfall of another, even though the two be only twenty miles apart. Droughts of more than a couple of months are practically unknown, and grass is always abundant.

Winds.

One of the chief means whereby the great healthiness of the climate is maintained is the constant presence of fine breezes, blowing both summer and winter, the prevailing winds being north-east and south-west, and very seldom passing into really heavy gales. In the middle of summer, the sea-breeze during the day and the land breeze at night are almost unvarying.

General Products and Industries.

Timber.—The vast forests of kauri and other valuable trees have given this district the foremost place for production and export of timber. There are many safe and sheltered harbours for shipping, while streams and rivers without number form convenient highways for conveying logs to the mills or ports. Some idea of the extent of this industry may be given by quoting from the official returns made at

the time of the last census. There were then forty-nine steam saw-mills situated in various parts of the district, with engines of a total of some 2,000-horse power. These mills employed over a thousand men, and produced yearly some 80,000,000ft. of sawn timber, valued at £301,328; of timber resawn into flooring, skirting, &c., some 21,000,000ft., valued at upwards of £91,000, not to mention posts and rails, mouldings, sashes, and doors. Besides this output, in the remoter parts of the district large quantities of timber are hand-sawn. The durable puriri is converted into railway-sleepers, for which there is a great demand, and the totara is largely sought after for telegraph-posts and wharf-piles.

Kauri-gum.—The most unique production of this portion of the colony is kauri-gum, obtained for the most part from the country north of Auckland. It is formed by the hardening of the exuded turpentine from the kauri tree, and is dug out of ground from which the forest has been burnt off. The Royal Commission lately appointed elicited the fact that in 1893 the procuring of the gum gave employment to no less than 6,897 persons. Last year 7,425 tons were exported, valued at £418,766. The kauri-gum is extensively used in the manufacture of varnish, and also for glazing calico. Nearly two-thirds of the varnishes in the market are produced from this gum. The average earnings of a digger may be taken as from £1 7s. to £1 10s. per week.

Flax (*Phormium tenax*).—An industry, which is for the present in a languishing condition, is the conversion of the broad leaves of the *Phormium tenax* into marketable flax suitable for the manufacture of rope, twine, mats, mattresses, and numerous other articles. The flax-mills are scattered over different parts of the district, as near rail- or water-carriage as possible, and employ about eighty men and boys, whilst the local rope-and-twine works give work to some forty more.

Gold.—This district has in the past produced large quantities of gold, but the area over which auriferous quartz-reefs have been discovered is limited to the Counties of Coromandel, Thames, Ohinemuri, and a small portion of Piako. In 1895 the output of this neighbourhood was nearly 40 per cent. of all the gold produced in New Zealand, the quantity (111,213oz.) entered for duty for exportation having been valued at £430,682. The average annual earning per man of the miners is £122 15s. 9d., the highest in the colony. From 1878 to 1892 the Thames Goldfield alone produced some 600,000oz. Now that the area over which auriferous quartz-reefs have been discovered has increased, a much larger output may be expected in the future. During the past year (1895-96) there were 93,414 tons of quartz dealt with, against 66,999 tons for 1894-95. The gold won from the quartz amounted to 191,246oz. for 1895-96, and 134,701oz. for 1894-95, being an increase of 56,545oz. during the past year, besides what was obtained from tailings, being 30,041oz. for 1895-96. The total estimated value of the gold was £378,107 for 1895-96, against £261,746 in the previous year. All the gold won was obtained by battery amalgamation, and the bullion by the cyanide process. There is a large amount of English capital being expended in developing new discoveries in out-districts away from the goldfield, but it will be some time yet before these discoveries have reached their full development. At the Thames there is a School of Mines, well attended and showing good results.

Coal.—Coal is found in most parts of this district, and is being worked with more or less success at Kawakawa, Hikurangi, Kamo, and Ngunguru, to the north of Auckland; whilst in the south there are three mines at Huntly, all turning out a good household coal. The total output of all the mines in 1895 was upwards of 135,000 tons.

Fruit.—The climate of the Auckland District is excellently well adapted for the growth of the orange, lemon, vine, and olive, as also for the fruits of England, America, and Japan. The subtropical kinds flourish about Hokianga, in the north; those of the temperate regions, in the Waikato and neighbourhood. Now that the problem of how to land fruit in good condition in the London market has been solved, orchard planting is rapidly progressing, and it has been found that the culture of the hard varieties of the apple will repay export to England. Of late years a demand has set in for the poor clay-land that used to contain gum, as it is admirably suited for fruit-growing. Orchards are

now planted in neighbourhoods where the soil has lain idle for years, for it has been proved that apples grown on this poor soil keep longer than those grown on richer land. More attention is being just now paid to stone fruits, for which there is always a steady local market, than to apples, which have of late years been heavily handicapped by blight. The fruit industry in Auckland is yet in its infancy, but is capable of great extension. At present peaches are the only fruit canned, though there is also a good deal done in the way of drying fruits and vegetables by the process of evaporation.

Fishing.—The sea and harbours abound in fish. At least eighteen different varieties, suitable for the table, are caught with little labour, and settlers living near the sea-coast, or any one of the many harbours and tidal rivers, can always obtain enough for all necessities. At present the canning industry is confined to mullet, of which there is a large amount exported, and an equal quantity used for home consumption. The rock-oyster is found over a large area on these coasts, and large quantities are sent both to the southern ports of the colony and also to Australia.

Chief Centres and Surrounding Districts.

The City of Auckland lies on the southern shore of the Waitemata Harbour, one of the finest havens in the colony, on a narrow neck of land between the Waitemata and the Manukau. Alike from the sea and from the neighbouring hills the city and surrounding country present a charming picture. Especially fine is the view from Mount Eden, a low volcanic hill in the suburbs. Facing the town are the green hills and white houses of the North Shore, and the remarkable peak of Rangitoto; beyond lie the many islands of the Hauraki Gulf, with the blue hills of Coromandel and the Great Barrier in the far distance. Clustered near the foot of the hill, and scattered for many miles to the southward, are charming villa-like houses, with tasteful gardens and shrubberies, while to the north-west the view is closed by high wooded ranges. The city is unrivalled for its commercial position; it has communication by sea with both sides of the Island, while the Kaipara and Wairoa Rivers leading far into the northern peninsula, and to the south the Waikato and Thames Rivers leading into the heart of the Island, give it excellent natural facilities for inland communication. In April of this year the population of the city and suburbs amounted to 57,616 persons. The city is well supplied with gas and water, and amongst public buildings may be noticed Government House, the new Government Offices, Post and Telegraph Offices, Supreme Court, &c. There is a Free Public Library and Art Gallery, and a good Museum, containing what is probably the best Maori collection in the world. The Auckland University College is affiliated to the New Zealand University. The Victoria Arcade, the Exchange, Harbour Board Offices, hotels and clubs, as well as many commercial buildings, compare favourably with those in other parts of the colony. There are admirable recreation-grounds, including the Government Domain of about 180 acres, as well as the Botanic Garden and the Albert Park in the centre of the city. There is a tramway system extending through the suburbs. Auckland has numerous industries, including, amongst others, ship-building, sugar-refining, timber-converting, sash-and-door manufactories; rope-and-twine, pottery, brick-and-tile, and varnish works, printing-offices, &c.

The City of Auckland is the centre from which radiate all railways, road-, and steamer-routes. From it, by rail, lies the way to all Crown lands south of the Waitemata, while the Kaipara Railway connects it with the country north of Helensville. All lands to the north and along the Bay of Plenty are reached from its wharves by the Northern Company's steamers. The chief centres to the north are:—

Warkworth, on the East Coast, forty miles from Auckland, with communication by coach and steamer nearly every day. It is a thriving township, with post- and telegraph-office, public halls, hotels, &c., and is the starting-point for the Tauhoa and Pakiri Crown lands. It is also the site of important hydraulic-lime and cement works. A good deal of agricultural and pastoral farming is carried on in its neighbourhood.

On the West Coast an important centre is Helensville, on the Kaipara Harbour, distant thirty-six miles from Auckland, with which it is connected by rail. It has

all the conveniences required by travellers in the shape of good hotels, stores, &c., and is the starting-point of the river-steamers running to all places in the Otamatea and Hobson Counties. It is also one of the main centres for sawmilling, and for the export of balk timber by large vessels to other colonies, and has several flax-mills.

Dargaville, on the Wairoa River, is a town of about 400 inhabitants, with all conveniences for travellers. It may be reached by rail and steamer from Auckland three times a week. Dargaville is the starting-point of the Kaihu Valley Railway, which is open for traffic for twenty miles from the town, and from the terminus of the railway all the Crown lands in the neighbourhood are reached, even so far north as Hokianga. The town is also the centre of a very large timber export. There are only two townships of any importance north of Dargaville—Port Rawene, or Hokianga, and Kohukohu, about four miles further up. Both have post- and telegraph-stations, and comfortable hotels, with fortnightly steam-communication from Auckland.

Whangarei, on the East Coast, is distant seventy-five miles from Auckland, with which it has steam-communication twice a week. The town is a thriving and important place, having a population approaching 800, and is the centre of a large agricultural and pastoral country. In the neighbourhood is also a large coal-bearing and gum-producing district, while the export of oranges and lemons, which thrive magnificently on the rich volcanic soil, is increasing fast. From here a coach runs weekly to Kawakawa, upon the arrival of the Northern Company's steamer, and from it, by carriage or horse, all lands can be visited within a radius of thirty to forty miles.

Kawakawa, at the head of the tidal portion of the river of the same name, is connected by a short railway-line with Opua, the calling-place of steamers from Auckland. Kawakawa possesses good inns, and a branch of the Bank of New Zealand. From it coaches run weekly to Hokianga and Whangarei. It is the centre of a coal and gum industry, and a port of lading for those products. The old town of Russell is situated further down the bay, and has good inns, besides having post- and telegraph-office, and a branch of the Bank of New Zealand. To Whangaroa and Mongonui the Northern Company's steamers run every week. Whangaroa is famed for its exquisite scenery, and is the centre of a large timber- and gum-export trade. Mongonui is the starting-point and centre from which to visit, by carriage or horse, all the Crown lands in the Mongonui County, and from it the steamer "Staffa" runs to Awanui and ports beyond, in connection with the weekly steamer from Auckland.

South of Auckland, along the Waikato Railway, there are numerous townships of more or less importance, but no starting-point for Crown lands, until Mercer is reached at a distance of forty-three miles. It is situated at the borders of what is known as the Waikato Country, upon the Waikato River, which is tidal up to this point. Mercer is the centre of a large flax-industry, and has post- and telegraph-office and other conveniences. At sixty-five miles from Auckland by rail is Huntly, also on the Waikato River, a flourishing township, with a very large output of valuable coal. It has also pottery-, brick-, and tile-works. On the opposite side of the Waikato River large areas of Crown lands are being brought into use, and are carrying many sheep and cattle. The next town is Ngaruawahia, or Newcastle, seventy-four miles from Auckland, situated at the junction of the Waikato and Waipa Rivers, with hotels, bank, post- and telegraph-office. It is a centre from which portions of Crown lands in Raglan County are reached, and also from it river-steamers run north and south to the various settlements. Ngaruawahia has a flourishing creamery, a brewery, and a cooperage. At eighty-four miles from Auckland the train reaches Frankton Junction, where a line branches off to Hamilton, Te Aroha, and Oxford, the main line going to Te Awamutu, ninety-nine miles from Auckland. The latter is a thriving town; but to reach available lands for future settlement the traveller passes on by rail to Otorohanga and Te Kuiti, fifteen and twenty miles further on respectively, at both of which places there are accommodation-houses, forming convenient centres for visiting the fertile undulating limestone lands in the vicinity. Hamilton is a busy, flourishing town, situated on both sides of the Waikato River, with a population of about 1,300 persons, and is the centre of a large agricultural

and pastoral district. It possesses a creamery, flax-mill, brewery, and two soap-factories, besides other local industries. Cambridge, about thirteen miles by road and fifteen miles by rail from Hamilton, has a population of about 900, and is the headquarters of the Farmers' Club. It is a busy, thriving township, surrounded by good farming country. Between Hamilton and Cambridge, and in the country round, there are numerous creameries, cheese- and butter-factories; wine- and cider-making is also successfully pursued, and there are several apiaries, from which large quantities of honey are produced. There are three flour-mills in the district, one at Cambridge, one at Hamilton, and the third at the terminus of one of the before-mentioned branch lines. One hundred and sixteen miles from Auckland by rail is Te Aroha, a quiet township, celebrated for its thermal springs and good hotels.

The settlements at the Thames and Coromandel are essentially mining townships. The first is situated thirty-eight miles by steamer from Auckland, on the Firth of Thames, and at the mouth of the Waihou River. It has a population of about 4,300 persons. There is daily steam-communication with Auckland, and a railway connecting it with Paeroa and Te Aroha. Coromandel is about thirty-five miles from Auckland, with which it has constant communication by steamer; it is another mining centre, situated at the head of a picturesque harbour. Tauranga, with a population of about 1,020, is situated on the harbour of that name in the Bay of Plenty. Coaches run thither from the Thames, and from Rotorua; it has also constant communication by steamer with Auckland, and with Matata, Whakatane, and Opotiki. From the fact of the harbour being the only one on the East Coast capable of receiving large vessels the town is bound to be of importance in the future. Tauranga has a new and well-appointed flour-mill upon the Waimapu River, also a chemical and sulphuric-acid works, and a cheese factory.

Opotiki, the second town of importance in the Bay of Plenty, is situated about sixty-five miles by steamer or road from Tauranga. It has weekly steam communication with Auckland, and is connected with Gisborne by a bridle-track. It is the headquarters of the maize-producing district, and has rich alluvial lands, from which good returns are obtained. It is a good starting-point from which large blocks of Crown lands suitable for pastoral purposes may be reached.

The Township of Rotorua is situated on the shores of Rotorua Lake, at a distance of 172 miles from Auckland. Since the railway from Oxford was opened travellers can now reach Rotorua in one day from Auckland. It is the chief township in the hot-lakes district, and has also a large area of fairly good Crown land near, adapted for pastoral purposes. Considerable quantities of sulphur are obtained from the neighbourhood.

Crown or Native Lands available for Future Settlement.

In the Mongonui County the Crown possesses 108,100 acres of fairly-good forest-land, tolerably easy of access.

In the Bay of Islands County there are only about 27,600 acres of available Crown land, both forest and open, but the Natives still own some 152,000 acres, chiefly forest land, except about Kaikohe, where it is open and rich volcanic land, most of it broken, but fit for settlement.

In Hokianga County there are some 150,587 acres of available Crown land, of good quality, nearly all covered with forest, and fit for immediate settlement. The Natives still own some 126,000 acres, almost all good land, and fit for settlement.

In Whangarei County there are about 63,482 acres of available Crown land, mostly broken and forest-clad. The Natives still retain some 54,000 acres of land, part of it very rich.

In the Otamatea County the Crown retains only about 16,041 acres, a good deal of this being alluvial swamp, and well worth draining. The Natives still own about 20,000 acres, but not much of it is fit for settlement.

In the Rodney and Waitemata Counties about 19,282 acres of Crown lands are left, most of it fit only for pastoral or fruit-growing purposes. The Natives still own about 14,000 acres in these two counties, some of it very good land.

In the Manukau County the Crown owns some 23,765 acres of broken forest land, fit for pastoral purposes. The Natives still own about 15,000 acres, a portion of which is fairly good.

In the Waikato and Raglan Counties the Crown lands amount to about 61,978 acres, all fairly good land, mostly forest, and easy of access. In Raglan County the Natives still own the freehold of 150,000 acres, all good land, but difficult to secure.

In the Coromandel, Thames, and Ohinemuri Counties there are about 20,528 acres of available Crown lands. In the last two counties a good deal of the land is swampy, and requires draining. The Natives still own 50,400 acres, much of which is very good.

In Tauranga, Whakatane, and Rotorua Counties the Crown owns 332,675 acres, nearly all forest-clad, and generally broken; but in the last-named county the Natives retain a very large area, the greater part too broken and too much covered with pumice or volcanic ash to be fit for settlement.

In the Kawhia and West Taupo Counties the Crown is acquiring from the Natives large areas of very good land, all fit for settlement and easy of access. About 300,000 acres are really first-class land, and about 1,000,000 acres fairly good land, all suitable for pastoral purposes, and accessible from the Main Trunk Railway-line.

THE TARANAKI LAND DISTRICT.

By J. STRAUCHON, Chief Surveyor.

The Taranaki Land District is situated on the western side of the North Island of New Zealand, at about its widest part, and may be said to be the most compact and fertile district of the colony, for, with the exception of the upper half of Mount Egmont, and of the ranges adjoining, which absorb about 36,000 acres, the whole of the area—minus what is taken up by the rivers, streams, and lakes—is suitable for settlement, and certainly two-thirds of the district is good land. The gross area of the district is 2,430,000 acres.

Physical Features.

Of mountains, the principal one is the beautiful volcanic cone from which the district takes its name, Taranaki, otherwise called Mount Egmont, which has an altitude of 8,260ft. This mountain is the centre of distribution for a radius of twenty miles of the volcanic formation known as the "drift," which covers the volcanic rocks below an altitude of 3,000ft. Hummocks composed of trachyte boulders and cement crop up here and there and make excellent metal-quarries.

Beyond the volcanic formation—that is, from about Urenui on the north and Hawera on the south—the country is generally broken, and the formation is known as papa, a calcareous blue clay, capped in many places by shelly limestone.

The northern portion, between the Tongaporutu and the Mokau Rivers, contains also limestone, greensands, and coal outcrops. At Pauirau, a small tributary of the Mokau, about thirty miles from the sea, there is an isolated patch of volcanic agglomerate and tufas, and a similar formation is found at the north-eastern corner of the district.

Eastward of the base of Mount Egmont there are few, if any, mountains worthy of the name, although there are many ranges varying in height from 1,000ft. to 1,500ft. above sea-level, and, in a few instances—such as the Matemateonga and Waiaria Ranges—they run up to 2,500ft.

The principal river is the Wanganui, which bounds the district on the east between Taumarunui and Pipiriki, a distance of about ninety miles. Its average width varies from 2 to 3 chains. For nearly the whole distance it is shut in by high precipitous hills, and in many places by perpendicular walls of rock. The scenery is very grand and beautiful. There are numerous rapids, but few of them are dangerous

to skilful canoeists. A steamer runs regularly from Wanganui to Pipiriki, a distance of fifty-six miles. The principal tributaries of the Wanganui on the Taranaki side are the Ongaruhe, Ohura, and Tangarakau Rivers.

The next river in size is the Mokau, bounding the district on the north. It is navigable for small steamers of 20 tons or 30 tons as far as the coal-mines, about twenty miles from its mouth, and for canoes as far as Totoro, twenty-six miles further up. Several outcrops of coal are found on its banks, and, as limestone is also present, the river is likely to become the most important waterway of the district. The scenery on either side, although not on quite so grand a scale as may be seen on the Wanganui, is very beautiful.

The other large rivers are the Waitara and Patea. The former has its source about midway between the coast and the Wanganui River, in an easterly direction from Pukearuhe, between New Plymouth and the Mokau. It is about a hundred miles in length, and runs out at the Town of Waitara, some ten miles north-east from New Plymouth. There is a bar at the mouth, but steamers of 300 tons can enter safely in calm weather, and, although there are numerous rapids on its course, it is navigable for canoes for about ninety miles.

The Patea River rises in Mount Egmont, and, after traversing a tortuous course of about 110 miles, runs out at the extreme southern end of the provincial district. It has a bar-harbour, with a depth of 13ft. to 14ft. at spring-tides. Steamers of from 40 tons to 50 tons trade regularly to the town of Patea, which is situated a mile or so north of the mouth. The Patea is navigable for canoes for fifty miles.

Besides these rivers there are many smaller ones, and streams innumerable—in fact, no district in the world could be better watered and at the same time so secure from disastrous floods. It is estimated that between the Mokau and the Patea there are no fewer than eighty-five named streams emptying themselves into the Tasman Sea, fully sixty of which flow from Mount Egmont.

Excepting the Ngaere Swamp, a block of open land near Eltham, 3,700 acres in extent, now partially drained and recently disposed of for settlement purposes, there are no plains, properly so called, in the district, although the stretch of very fertile country lying between the Waingongoro and Otakeho Rivers, comprising an area of about 25,000 acres, is known as the Waimate Plains. Of this area 13,500 acres have been disposed of, and the remainder, 11,500 acres, has been handed back to the Natives as a reserve.

There are no lakes worthy of the name. The largest sheet of water is Rotokare, situate about twelve miles from Eltham; it is about half a mile in length, with an average width of six chains. There are also a few small lakes inland from Waverley, at the southern end of the district.

The whole of the district, with the exception of a fringe of open country along the coast from Pukearuhe to Patea, averaging three miles in width, and containing about 250,000 acres, and some valleys at the north-eastern corner of the district, about 150,000 acres in extent, was originally covered with heavy forest. Estimating the area already cleared for settlement at 180,000 acres, it will be seen that there still remain about 1,840,000 acres under bush.

The larger timber is chiefly rata, rimu, matai, tawa, kahikatea, kohekohe, pukatea, rewarewa, hinau, with a few totaras scattered here and there. Among the smaller trees may be mentioned the kotukutuku or *fuchsia*, karaka, and mahoe.

As regards the timber industry, there are altogether fourteen saw-mills, and the total quantity cut in 1895 was 13,500,000ft., chiefly rimu (red-pine), kahikatea (white-pine), and matai (black-pine). Exported, 49,479ft.; imported, 291,568ft., chiefly kauri, and 10,000ft. American pines, for sashes, doors, &c.

An area of 72,565 acres, measuring six miles on every side from the summit of Mount Egmont, has been set apart as a forest-reserve. At about two miles within the reserve the forest begins to get stunted; and at three miles it gives place to low wiry scrub, which ceases at four miles, or an elevation of about 4,000ft. At 5,000ft. the moss ends; beyond this point to the summit the mountain is composed of loose scoriæ and lava.

A comfortable mountain-house has been built at an elevation of 3,000ft. on the northern face of the mountain, at a distance of nineteen miles from New Plymouth

by the Junction and Egmont Roads. Fifteen miles can be driven over, and the remaining four ridden. This house is maintained by the North Egmont Forest Board of Conservators, and is open for the accommodation of visitors from the middle of December to the end of March in each year. The keeper acts as guide also. There are women's rooms at one end of the house, men's at the other, with large common living- and dining-room in the centre. Visitors provide and cook their own food; a small charge is made of 2s. for the first and 1s. for each successive night the visitor remains. Guide's fee for mountain, £1 per party. During the past season there were 165 visitors, remaining various periods of from one or two days to as many weeks. In fine weather, when the snow is off, the mountain can be ascended without risk by various routes.

The mountain can also easily be ascended from Stratford side, the return journey occupying about thirteen hours, including stoppages. Tourists can ride over the first twelve miles to a rough shelter-shed near the grass-line: time occupied, about three hours. Here the horses are left, and the remaining climb has to be done on foot: time required for fair walker, a good three hours, although, coming down, the distance can be done in two hours. Good hotel accommodation, guide, horses, and provisions, can be obtained in Stratford on reasonable terms. The return trip can be varied by visiting Dawson's Falls and Kendle's Cascade.

Another route now coming into favour is from Manaia and Kaponga *viâ* Dawson's Falls. At the latter place a comfortable shelter-house, capable of accommodating over thirty people, has recently been erected. This house, which is close to the Falls, is within an easy two hours' ride of Kaponga. During the season the house is in charge of a caretaker, and food, bedding, horse-feed, and paddocking can be obtained. From the house to top of Mount Egmont occupies a good six hours' climbing at a moderate pace. From the top, where the whole Taranaki District lies spread out to view at one's feet, the tourist can, instead of returning by same route, drop down to the mountain-house on the north or New Plymouth side of, and 3,000ft. up, the mountain. The walk would not occupy over two hours, easy walking.

Soils.

The volcanic soil, the boundaries of which have been already described, varies a good deal in quality. The best is believed to be on the south side of the mountain, between Stratford, Hawera, and Opunake, but not less than two or three miles from the forest-reserve boundary. It is thought that the country now being opened to the north and east of the volcanic deposit—that is, the papa and limestone formation—will, from the presence of lime, be much richer and more lasting as pasture-land than that around the mountain. The carrying-capacity of the land is, on an average, three sheep to the acre.

Grazing and Agriculture.

Taranaki is essentially a grazing and dairying district, its chief product being butter, of which, during the year 1895, there were 4,090 tons exported, valued at £381,733. There are fifty-three dairy factories and thirty-one creameries scattered over the district. Freezing-works are now also in course of erection at Moturoa, near the Breakwater, and will be in full swing next season.

Agriculture has not hitherto been carried on largely. The total area under grain-crops (for threshing) was 6,781 acres; under green and other crops (including those cut for chaff, green food, and ensilage, also root crops, gardens, and orchards), was 13,081 acres; area in sown grasses, 498,423 acres; total under all kinds of crops, 518,285 acres, with an additional area of 1,410 acres of forest-tree plantations.

The average yield of different grain-crops in bushels per acre was, last season: Wheat, 24; oats, 30; barley, 34; rye, 21.

Mining.

The only mining going on at present is at the Mokau Coal-mine, which is situated on the Mokau River, about twenty miles from the sea, the river being navigable right up to the mine for vessels of 6ft. 6in. draught. This mine recently changed hands, and is now held by a Scottish company, known and registered as

"The Mokau Coal-mines Syndicate (Limited)," which occupies under a sixty years' lease from the native owners. The coal is of best class of pitch brown, and is rapidly gaining favour as an excellent household coal, and is also good for steam purposes. Eight distinct seams of this coal are already known, one overlying the other, and varying in thickness from 2½ft. to 8ft. The one now being worked is the fourth of the series, and 8ft. thick, with a 6in. band of slate in middle, but this band is rapidly running out. At the entrance to the drive, which runs some 15 chains into the hillside on an upward incline of 1 in 24, and is laid with the usual light mining rails, on which the trucks are worked by horses, the altitude above level of the river is about 40ft. The broken ground has now been passed through, and a face of 250ft. of good sound coal exposed It is proposed to sink on the lower seams to test their thickness and quality. Ten men are at present employed. The output during 1895 was only 446 tons, but it is hoped during 1896 to increase this to 500 tons per month, and with this end in view the company has purchased two small steamers to trade regularly between the mines, Mokau, Waitara, New Plymouth, and Wanganui. A considerable amount of work has been done both by the Government and coal company in snagging and opening up the river for traffic, which must also prove of great advantage to the lands on both sides for miles above the mines. A signalman has been appointed at the entrance of the river.

After a lapse of many years, boring for petroleum has been resumed. A new bore was sunk at Moturoa, close to the former bore, and at a depth of about 875tf., oil was struck in considerable quantity. After fully testing this well, it was found that it was impossible to "shut off the water" from below, which seemed to rise and fall with the tide, thus indicating the existence of some fissure or other means of inlet from the sea. The result was that only about two or three barrels, of 42 gallons each, could be got per day, the oil rising at intervals only, and all efforts to pump having continuously failed. The company then chose a site about half a mile inland, and sank a bore to the depth of 1,534ft. without, however, obtaining any oil. A third bore, which is still open, was then sunk about a quarter of a mile from the first, and in this gas in a great volume was struck at about 908ft., followed at 910ft. by oil in great quantity and of excellent quality. Unfortunately, this was struck in soft papa, and after about twenty barrels had been pumped, and when the company was beginning to sell and to export its crude petroleum, the supply suddenly ceased. The gas, which had previously issued in sufficient quantity to enable the company to dispense with other fuel, ceased at the same time. The most probable explanation of this mischance is that the soft papa, of which the roof of the oil-seam is composed, having been deprived of the support of the formerly imprisoned gas and oil, has collapsed, and thus choked the oil-seam lying in the vicinity of the bore. After further efforts to pump out the mud filling the bore, the company resumed drilling with the hope of obtaining another oil-supply at a greater depth. At 1,384ft. oil was obtained in small quantities, and gas was thrown up in great volume. The bore is now (June, 1896) over 1,700ft., and is still in the sedimentary papa-rock. The company intend, if possible, to go through this and into the oil-bearing strata below it. The pluck, energy, and capital devoted by the present company to the development of this important industry, deserve the reward of success.

Ironsand is found in great abundance on the seashore from Mokau to Patea, a distance of 130 miles. It produces, when smelted, from 50 to 60 per cent. of iron of the finest quality. The first attempt to smelt this sand was made in 1848, and several trials have been made since, but the heavy cost of production and the absence of capital and modern appliances have, so far, retarded the industry. Strong efforts are now being made to remedy this by the introduction of outside capital.

Climate.

The climate of Taranaki is remarkably healthy, without any extremes of temperature. Below is given a table of mean temperatures in shade for the year ending December, 1895:—

Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
66·7	65·6	61·9	58·5	54·9	51·0	46·1	48·5	52·9	55·8	56·7	62·5

The maximum in the shade for the year was 85·0 and the minimum 27·0; the mean barometric reading was 29·833in.

At New Plymouth, rain fell on 185 days during the year, the total rainfall being 67·88in., or an average of 5·65in. per month. But the rainfall varies considerably with the locality; for instance, near Waipuku, the highest point of the railway, about east from Mount Egmont, the fall for the year was 102·98in. while rain fell there on 201 days.

Chief Towns.

The principal town of the district is New Plymouth (population about 3,900), situate on the seashore, about two miles from, and to the north-east of, the picturesque rocky islets known as the Sugar Loaves. The general appearance of the town is very attractive, and it abounds in neatly-kept gardens. The Recreation Grounds, from which a good view of Mount Egmont is obtained, form a favourite resort.

New Plymouth is 252 miles by rail from Wellington, the railway running in a northerly direction through the district from Patea to Sentry Hill, where it turns at right-angles westward for eight miles to New Plymouth. From Sentry Hill there is a branch line to Waitara, four miles distant.

The Port of New Plymouth is situated at the Sugar Loaves, two miles from the town. Protection for shipping is afforded by a concrete mole or breakwater running in a north-east direction for a distance of 1,900ft. Under the lee of this there is wharf-accommodation provided for the coastal trade. Steamers of 500 tons can be berthed here in almost all weathers. The wharf is connected with New Plymouth by both rail and road. The breakwater was built at a cost of £200,000, borrowed under security of one-fourth of the land revenue of the Provincial District of Taranaki, and the right to levy a rate over certain lands. The present rate levied is ¾d. in the pound on the capital value. The exports for the year (by sea and rail) were: General merchandise (mostly dairy produce), 4,500 tons; wool, 91 bales; fungus, 83½ tons; hides, 2,900; grass-seed, 276 sacks; horses, 133; cattle, 2,176; sheep, 2,599; timber (by sea), 4,100ft. Imports by sea: General merchandise, 9,928 tons; flour, 2,088 tons; grain, 1,782 tons; potatoes, 678 tons; coal, 1,949 tons; timber, 123,400ft.; horses, 165; cattle, 244; vehicles, 13. During the year 359 steamers, of a gross tonnage of 92,380 tons, also 1 sailing vessel of 63 tons, visited the port.

Manufactures in New Plymouth are represented by a sash-and-door factory, a boot, a butter-keg, and three coach-factories. There is also an iron-foundry, a tannery, a flour-mill, and a bone-mill. The town has both water and gas laid on.

Hawera, the next largest town, is situate on the eastern edge of the Waimate Plains. The population is about 1,800. The Wellington–New Plymouth Railway runs close to it, the distance by rail from New Plymouth being about forty-eight miles. Hawera is surrounded by a first-class grazing country.

The Town of Patea is situated on the coast, at the extreme southern end of the district, and has a population of about 750. There is a splendid grazing district inland, with a large area of land yet to be opened up. The principal industry is the canning, freezing, and boiling-down of meat. A dumping-plant has been erected by the Harbour Board. Exports for the year were: Wool, 4,346 bales; fungus, 102 bales; tallow, 1,150 casks: pelts, 279 casks; hides, 3,387; corn, 384 tons; grass-seed, 1,748 sacks; potatoes, 80 tons; butter, 6,559 boxes; tinned meats, 4,653 cases; bone-dust, 200 tons; sundries, 124 tons; flax, 184 tons; cattle, 328; sheep, 1,096. Imports: General merchandise, 6,496 tons; coal, 871 tons.

Stratford, a comparatively young town, lies about midway between Patea and New Plymouth. It has already a population of about 1,300, and is growing fast. The height above sea-level is 1,000ft., and the climate is bracing though somewhat moist. The main road to Auckland—known as the Stratford–Ongaruhe (now Ohura Road)—starts here. It has been formed as a cart-road for thirty-five miles, and the remaining distance is in course of construction. If the work is continued, communication with Auckland should be opened up in about three years' time.

Waitara, a small seaport town of 500 inhabitants, is situated on the river of the same name, a mile up from the sea, and about ten miles north-east from New

Plymouth. The meat-freezing works have again been reopened. Exports for year are: General merchandise, 397 tons; frozen meat, 110 tons; butter, 478 tons; tallow, 59 casks; grass-seed, 841 sacks; cattle, 51; sheep, 472; wool, 841 bales; hides, 407; sheepskins, 660; timber, 45,479ft. Imports: General merchandise, 1,566 tons; flour, 334 tons; wheat, 65 tons; oats, 246 tons; potatoes, 40 tons; artificial manure, 60 tons; timber, 168,161ft. (chiefly kauri); coals, 989 tons. Eighty-four steamers and eight sailing-vessels, representing a gross tonnage of 9,724 tons, visited the port during the year.

Inglewood, situated on the railway-line, sixteen miles south-east of New Plymouth, is a flourishing little town of some 650 inhabitants, rapidly coming to the front.

The only other towns of importance are Eltham, Opunake, and Manaia.

Roads and Railways.

The chief means of communication is the railway from Wellington, which traverses the district between Patea and New Plymouth—a distance of sixty-six miles. Trains run every day between New Plymouth and Palmerston North—164 miles—and on Tuesdays and Fridays there are through trains between New Plymouth and Wellington—252 miles. The Main North Road runs from New Plymouth, passing through the Towns of Waitara and Urenui; it is formed as a cart-road as far as Pukearuhe, a distance of thirty miles. From here a horse-track connects with the Mokau and Awakino Rivers, and from Awakino there is a track to Te Kuiti, in the Auckland District. About midway between New Plymouth and Waitara on the above road the Mountain road diverges and runs almost due south, and chiefly along the railway, for a distance of forty miles, connecting with the Main South Road at the Town of Hawera. This is at present the principal road in the district, tapping, as it does, large numbers of district roads, and passing through the Towns of Inglewood, Midhurst, Stratford, Eltham, and Normanby.

The Ohura Road branches from the Mountain Road at Stratford, and is formed as a dray road for a distance of thirty-five miles; it is being extended into the interior so as eventually to connect with Auckland, and will open up a large area of fertile country.

The Main South Road from New Plymouth follows the trend of the coast to the south, and was at one time the coach-road to Wellington. It passes through the Villages of Omata, Oakura, Okato, Rahotu, Otakeho, Manutahi South, and Kakaramea, and the Towns of Opunake, Manaia, Hawera, and Patea.

The Junction Road runs south-east from New Plymouth, and crosses the Mountain Road and railway at Inglewood. It is formed and metalled for seventeen miles, and formed only for a further distance of twenty-seven miles beyond this point. Eventually it will connect with the Ohura Road at a distance of thirty-two miles from Stratford. This road crosses a number of district roads; hence its name.

The Opunake Road runs from Stratford to Opunake, twenty-six miles, skirting the southern base of Mount Egmont. It is formed and metalled for twelve miles from Stratford; the remainder is open for horse-traffic only.

The Eltham Road runs from Eltham to Opunake, twenty-five miles, connecting with the Opunake Road at Punehu, seven miles from Opunake. This is formed throughout and partly gravelled.

The other main roads in course of construction are the Awakino Road, branching from the Main North Road at the Mimi; the Motukawa Road, diverging from the Junction Road near Tarata; the Rawhitiroa Road, leaving the Mountain Road near Eltham; the Waitotara Valley Road, starting from the Main South Road at Waitotara Township; and the Otaraoa, Moki, and Okoke Roads.

Crown Lands available for Settlement.

	Acres.
Crown lands available for settlement	521,000
Native lands undealt with	434,460
Total	955,460

Of the above, about 150,000 acres are open valleys and hills in the north-east corner of the district; a good deal of it more or less pumice-land, but still suitable

for grazing. From the rest may be subtracted perhaps 10,000 acres for area absorbed by rivers, gorges, &c., and there remain 795,460 acres of forest-land yet to be dealt with. Of this area perhaps 50,000 acres, made up of strips of flats and terraces, may be suitable for agriculture; while the balance—745,460 acres—will be good pastoral land.

It may be said, in conclusion, that there is every sign of genuine prosperity throughout the district, which has advanced rapidly during the last few years, and will no doubt continue to do so.

HAWKE'S BAY LAND DISTRICT.

By T. Humphries, Chief Surveyor.

The Land District of Hawke's Bay comprises that portion of the east coast of the North Island from Cape Turnagain, in latitude 40° 30′, northwards to Lottin Point, about thirty miles beyond the East Cape.

It has a seaboard of 300 miles, with an average depth from the coast of forty-five miles, and embraces an area of 6,063,000 acres. Its western limit is defined by the Ruahine, Kaweka, Ahimanawa, Raukumara, and other high ranges that form the watershed between the rivers flowing through it to the sea, and those that run to the west coast and the Bay of Plenty.

Physical Features.

The Ruahine Range extends northwards for about sixty miles from the Manawatu Gorge as far as the valley of the Ngaruroro River. Its altitude varies from 3,000ft. to 6,000ft., and for a considerable distance its summit is snow-clad during the winter months.

The Kaweka, a shorter range, divided from the Ruahine by the Ngaruroro River, attains an altitude of 5,650ft., is very rugged and steep, and a prominent feature in the landscape in winter, covered as it then is with snow.

From these two ranges, which fall very abruptly on the Hawke's Bay side, the land slopes gradually to the sea, forming in some parts fine rolling hills—the essence of a sheep-country—in others extensive plains, with comparatively little poor soil.

Northwards from the Kaweka there is a series of forest-clad ranges of varying height, stretching away in the direction of the East Cape. Hikurangi, the highest point, is a bold peak with an elevation of 5,606ft., rising so abruptly on all sides that the ascent can be made only at one point, and that with difficulty.

The only lake in the district of any extent is Waikaremoana, so famous for its magnificent scenery. It lies about thirty-five miles inland of the Wairoa (Clyde), and is eleven miles in length, with a breadth at the widest part of about eight miles. Nestled among precipitous mountain-ranges, wooded to the water's edge, with numerous bays and inlets, it has a natural beauty hardly to be surpassed.

From Wairoa there is a formed road to within four miles of the lake, and for the rest of the way a good riding-track.

The principal plains are: (1.) The Ruataniwha, some fifty miles south of Napier. This is 120 square miles in extent, is for the most part occupied as sheep-runs, and carries a large quantity of stock. (2.) The Heretaunga Plain, with an area of ninety square miles, lying immediately to the south of Napier. This is rich alluvial land; a large portion is thickly settled, the remainder used for grazing and agriculture. The only other plain of any extent is at Poverty Bay. It has an area of of sixty-five square miles, is very fertile, well cultivated, and bears a large population.

The land district is well watered throughout by numerous rivers and streams, but none are navigable except the Wairoa and Turanganui, and these only for vessels of light draught. They are both tidal, and serve as ports to the Towns of Wairoa (Clyde) and Gisborne.

Communication.

The chief outlets from Napier are three in number. First the Napier-Palmerston Railway, which traverses the centre of the southern half of the district for its whole length of 100 miles, and may be called the main artery of communication. Parallel to it throughout runs an excellent gravelled road, which was made before the construction of the railway. On either side there are numerous branch roads, which act as feeders, making a very complete system of internal transit. Another main road runs in a westerly direction to Kuripapanga, distant forty-five miles, a favourite resort in the summer time, removed as it is from the heat of the country near the coast. A coach runs thither twice a week, and on thence to Inland Patea, where the Napier Road meets the roads to Hunterville, Tokaanu, and the Wanganui River.

The part of the district served by these two main lines—viz., that between Napier and Woodville—contains the greater portion of the population, and from the extent of arable land within it is likely in the future to be very thickly peopled. Notwithstanding that so much of the Native land in this part is unoccupied, and in its natural state, there are nearly a million of acres of land in sown grasses, carrying 2,200,000 sheep and 63,277 cattle, and the population, inclusive of towns and villages, is 35,022 persons.

The only main road northwards from Napier is the coach route to Taupo, which, soon after leaving the fertile Petane Valley, begins to traverse poor country, and twenty-five miles out enters the light pumice soil.

From Napier to the Wairoa the journey must be done on horseback, as there is a break of thirty-five miles between Tongoio and Mohaka unfit for wheeled traffic; but this is being gradually remedied. As a natural consequence, the traffic between these two places has to be done by small steamers.

From the Wairoa a main road runs northward, through the Village of Tiniroto and on to Gisborne, a distance of seventy-five miles. For a considerable distance it runs through hilly country, and, as it has not been gravelled, wheeled traffic is suspended during the winter months; but a coach runs weekly for nine or ten months out of the year.

Between Gisborne and Opotiki, in the Bay of Plenty, communication is not good. The road, which is 120 miles in length, has been formed only to the edge of the Motu Forest, a distance of fifty miles. In the neighbourhood of the forest a large area of Crown lands has been taken up and settled in the last two or three years. The rest of the journey must be done on horseback.

In the country north of Gisborne, formed roads for wheeled traffic are few in number, and not continuous; but small steamers trade regularly along the coast, calling in at Waipiro, Tuparoa, and Awanui, Kawakawa, and other small bays.

Pastoral Industries.

The Hawke's Bay Land District is pre-eminently a sheep-grazing country. The extent of land in sown grasses, according to the latest returns, was 1,800,000 acres, and notwithstanding that a considerable amount is unused, or forest country —and therefore unproductive—while other parts are made use of for tillage only, in 1895-6 there were 4,245,811 sheep, besides 117,413 cattle. The value of the wool exported during the twelve months ending the 31st March, 1896, was considerably over a million pounds sterling, that shipped from Napier alone representing £744,856.

Freezing-works have been established at Woodville, Waipukurau, Tomoana, Napier, and Gisborne, and the export of frozen meat from the port of Napier alone during the same period was of a value of £180,635, while further shipments were made from Gisborne. This industry gives employment to a large number of persons, both directly to those engaged in breeding, shearing, freezing, and shipping, and indirectly to those who labour at bushfelling, grass-seed sowing, fencing, and otherwise opening up new country. Nor must the cutting of the immense amount of firewood consumed at the works be forgotten. All this benefits the settler with limited means, by providing him with funds to improve his holding, and to this is due, in a great measure, the general prosperity.

Agricultural Pursuits.

Agriculture is not carried on to the extent it might be with so much land suitable for root- and grain-crops. No doubt this is due to the profits made in sheep-farming. It is chiefly confined to the Heretaunga Plains and the flat lands near Gisborne. The soil is favourable to root-crops; potatoes range from 12 to 15 tons to the acre, and in some instances exceed this amount. Only a moderate quantity of grain is grown; barley, for which the soil seems well adapted, returning from 20 to 60 bushels of good sample to the acre.

Dairying.

Settlers are now turning their attention to dairying, and lately factories have been established in the bush districts at Norsewood, Maharahara, and Woodville, whilst several others are in contemplation. At the last-mentioned town a cheese-factory has been in existence for some years, and turns out an excellent article much sought after in other parts of the colony.

Timber Industry.

The timber industry is considerable, numerous saw-mills being in full work in different parts of the district. In the forest between Takapau and Woodville there are twelve, with an estimated yearly output of 10,000,000ft. This tract of forest is the one most used for milling purposes, and will yield a plentiful supply for a long time to come, notwithstanding that for years past a large amount of totara timber has been taken out of it to send to other parts of the colony. Further north there is no totara to speak of, though rimu, white-pine, and other milling timbers are to be found scattered throughout the forests, and in the Poverty Bay District puriri is found in some quantity.

Other Industries.

Other industries, such as fellmongeries, soap-works, boot-, coach-, and sash-and-door factories, &c., are established in the principal towns.

Climate.

The climate is generally of a mild character, and, though hot along the coast-lands in the height of summer, it is, owing to the dryness of the atmosphere, not so relaxing as in parts of the island farther north. The rainfall is light, excepting in the bush districts and high inland country.

Napier itself is recommended by many medical men as a resort for invalids suffering from pulmonary complaints, chiefly on account of the mildness of its winter season.

Towns.

Napier is pleasantly situated on the peninsula known as Scinde Island, which is joined to the mainland by a narrow shingle-bank of several miles in length. It is a busy town, with a population of 9,300. The business part is on the flat land at the foot of the group of hills that take up the greater part of the peninsula. These hills, formerly barren and waste, are now occupied by numerous private residences, and the very general tree-planting has given the upper town a distinctive and pleasing character. There is an excellent water-supply, derived wholly from artesian wells of large size, and pumped by machinery to reservoirs on the tops of the hills. The shipping trade, as the large exports show, is especially active during the wool and frozen-meat season. It is at present carried on at Port Ahuriri, about a mile from the town; but will, before long, in a large measure be transferred to the fine breakwater which is now advancing towards completion.

Gisborne, the trade-centre and port of what is known as the Poverty Bay District, is a prosperous town of about 2,300 inhabitants, rapidly increasing in size and importance, as the large quantity of unimproved land in the Cook County is fast becoming settled and made productive. There are nearly 700,000 sheep now in Cook County.

Clyde, the county town and port of the Wairoa County, is picturesquely situated on the Wairoa River, about three miles from the mouth. The river is navigable for small craft as far as the village of Frasertown, twelve miles further up.

With a few exceptions, the towns and villages to the south of Napier are all situated on the line of railway running from that city to Palmerston North. The principal are: Hastings, a rising town of 3,190 inhabitants, Waipawa, Waipukurau, Dannevirke, and finally Woodville, about three miles from the Manawatu Gorge, and distant ninety-eight miles from Napier. It is at this end of the district that the Crown has, in the last few years, successfully planted settlement, and, in place of the continuous forest known as the Seventy-mile Bush of earlier days, there are now prosperous townships, with various thriving industries established.

Crown Lands.

The land held by tenants of the Crown under the various systems of tenure amounts to about 423,000 acres, and there remains about 393,000 acres not yet dealt with in any manner.

The latter is, for the most part, suitable for pastoral purposes only, any fit for agriculture lying in small, isolated spots, widely scattered, and such as could not be selected independently of the surrounding inferior land. Nearly the whole is broken forest country, fitted more for sheep than cattle, and having an average carrying-capacity, when cleared, of about one sheep to the acre, though the best of it might possibly graze from two to three. The land is chiefly in the Hangaroa and Motu Districts, and the back-country of the Waiapu County.

About 48,000 acres are now open for selection. Of these, 5,000 are in the Nuhaka North Survey District, not many miles from the Mahia Peninsula. This is hilly forest country, with light soil, but well suited for grazing purposes. In the Waiau Survey District, near Waikaremoana, there are over 8,000 acres, also hilly country, of limestone formation. In the Motu District, between Gisborne and Opotiki, there are about 17,000 acres open, and in the Mata and Hikurangi Survey Districts, situated from fifteen to twenty miles inland from Waipiro, there are 13,700 acres of rough forest limestone country, at the present time not easy to get at; but a road to the block will shortly be put in hand. There are also 3,000 acres open in the Pohui District, about twenty-eight miles north of Napier.

Native Lands.

Of the Native lands in this district, a very considerable portion has been leased to Europeans, but there still remains in the hands of the Maoris a valuable estate, comprising both agricultural and pastoral country, and including some 800,000 acres of excellent land. This land lies for the most part in the Waiapu County, towards the East Cape.

THE WELLINGTON LAND DISTRICT.

By J. H. Baker, Assistant Surveyor-General.

The Wellington Land District is bounded on the north by the Districts of Auckland and Hawke's Bay, on the west by that of Taranaki, on the east by the sea, and on the south and south-west by Cook Strait. The area contained within these limits is about 6,000,000 acres. It lies between the parallels of 39° and 41° 30′ south latitude; its greatest length north and south is about 180 miles, and its mean width east and west about sixty miles.

General Physical Features.

The district is divided into two well-defined parts by a mountain range, which forms part of the backbone of the North Island. At its northern end this range—there known by the name of Ruahine, and averaging a height of about 4,000ft.—divides Wellington from Hawke's Bay; but after passing the point where it is intersected by the Manawatu River, the range takes the name of Tararua for many miles, until, at about forty miles from the termination on the shores of Cook Strait, it divides into two main ranges, known respectively under the general names of

Rimutaka and Tararua, both ranges averaging from 2,500ft. to 3,500ft. in height, the highest point being Mitre Peak, 5,154ft. Parallel to the main range, and divided from it by the Wairarapa Plain and the undulating country to the north, is a series of ranges at a few miles inland from the East Coast, known as the Puketoi, Taipo, Maungaraki, and Haurangi Ranges. Lying on the northern border of the district are the Kaimanawa Ranges, offshoots from the Ruahine. They are for the most part open and grass-covered, rising to a mean height of about 4,500ft. Westward from the latter mountains, and divided from them by a deep, broad valley, in which flow the Waikato and Wanganui Rivers, is the volcanic chain of mountains containing Ruapehu, 9,008ft., and Ngauruhoe, an active volcano, 7,515ft. high. The long sweeping curve of Cook Strait, forming the south-western limit of the district, is bordered, from the Patea River to within thirty miles of Wellington, by a comparatively level and undulating country, now nearly all under cultivation, having an average width of about fifteen miles. This is one of the finest parts of the colony, and is celebrated for its stock-raising capabilities. It was originally in a great measure open, though the southern part, where the plain is narrowed in between the sea and the Tararua Range, has a good deal of forest on it, now fast disappearing under the axe of the settler.

Inland of this coastal plain, at varying distances from the sea, the country gradually rises to a mean height of about 1,500ft. to 1,800ft., and becomes a good deal broken in character. It was originally forest-clad almost throughout. It is much cut up by rivers and streams flowing from the interior to the sea, of which the principal, commencing from the north, are these: The Waitotara, the Wanganui, the Wangaehu, the Rangitikei, the Oroua, the Pohangina, and the Manawatu, which last, after leaving the gorge in the Ruahine Ranges, runs through level land to its mouth in Cook Strait. This broken country, being everywhere composed of papa, or marly formation, which takes grass excellently, promises in the near future to be a large sheep-carrying district.

At about fifteen miles south of the volcanic peaks of Ruapehu Mountain the papa country terminates in a fairly well-marked escarpment, giving place to a more level and undulating country formed of volcanic matter, the greater portion of which is forest-clad, though on the south-east, east, and west sides of that mountain there are open grassy plains, of no great fertility, but yet suited to pastoral pursuits.

To the eastward of the main range formed by the Rimutaka and Tararua Ranges is the great depression known at its southern end as the Wairarapa Plain, which gradually rises northwards from the lake of that name into wooded, somewhat broken country, of no great height, at a distance of some forty-five miles from the sea. From here the country falls again slightly to the Upper Manawatu River, the depression in this part being marked by the extensive flats in the neighbourhood of Pahiatua, and by the shallow valleys of the Mangahao, Mangatainoko, and Tiraumea Rivers and their branches. For thirty miles from the sea this great valley is mostly open, with patches of forest here and there, but becomes more plentifully wooded at the base of the Rimutaka and Tararua Ranges. The quality of the soil varies from light and stony, on the Wairarapa Plains proper, to rich papa country, as the northern end is approached. The southern end of this country is watered by the Ruamahanga River and its tributaries. Generally the district is a pastoral one, though agriculture is also pursued successfully. The neighbourhood of the Puketoi Ranges is in many places composed of limestone, and promises in the future to become a very rich pastoral district, such as will carry a considerable population. In the forks formed by the Tararua and Rimutaka Ranges the Hutt River takes its rise, and runs in a southerly direction through an undulating or level country, finally falling into Port Nicholson. The valley contains some very fine land, generally held in small holdings.

Plains.

The two most important of all these have already been mentioned. On the eastern side of the main range the Wairarapa extends northward from the lake of that name for about forty-seven miles, with an average width of about nine miles. In some parts, especially on the flats along the Ruamahanga River, the soil is alluvial and rich; in others, though stony and unfit for cultivation, it is nevertheless grassed,

and carries stock well in the winter and rainy seasons. The plain is watered by the Waiohine, Waingawa, and Ruamahanga Rivers, and contains altogether about 200,000 acres, much of which is good agricultural land. On the other side of the district, west of the Tararua and Ruahine Ranges, there is a large block of land so nearly level that it may be called a plain, extending from Paikakariki (thirty miles from Wellington) to Marton (a few miles north of the Rangitikei River), and contains about half a million acres. Starting as a narrow strip between the hills and the sea, the plain widens out by degrees until at Fielding it is at least twenty miles in breadth. Along the beach runs a fringe of sandhills, but behind this is to be found some of the best farming and grazing land in the colony. There are two plains inland—Murimotu and Waimarino—both lying some 2,200ft. above sea-level, in the neighbourhood of Mount Ruapehu, the former to the south and the latter to the north-west of the mountain. The soil is covered with a coarse native tussock, and, though capable of carrying stock, is of a light porous nature, and cannot be classed as agricultural land.

Rivers.

First among these is the Wanganui—"the Rhine of New Zealand"—with a length of over 110 miles from its source, near Mount Tongariro, to its outlet. The Rangitikei, the next in size, rises in the Ruahine Mountains, and flows through the Awarua country, where it is joined by the Hautapu and other large tributaries. After a course of over a hundred miles it reaches the sea some little distance below the Township of Bulls, on the West Coast. The Manawatu is third in importance. Rising in the Ruahine, it flows through the picturesque Manawatu Gorge, joining the sea at the port of Foxton. Lesser rivers on the West Coast are the Waitotara (north of Wanganui), the Wangaehu (which takes its rise in Mount Ruapehu, and from its source to its mouth is so strongly impregnated with sulphur that fish cannot live in it), the Turakina, and the Otaki. The only other rivers of any size are the Hutt (Heretaunga), emptying itself into the Wellington Harbour, the Ruamahanga, flowing through the Wairarapa Valley and lakes into Palliser Bay, and on the East Coast the Pahaoa, Aohanga, and Akitio.

Lakes.

The only lake of any size in the Wellington District is the Wairarapa, lying between the Rimutaka and Haurangi Ranges, towards the southern end of the Wairarapa Valley. It is about twelve miles long and four broad, and is connected by the Ruamahanga River with Onoke, a small lake separated from Palliser Bay by a narrow shingle spit only. A passage through the spit is opened from time to time when the lake rises above its natural level and overflows the low-lying flats along its margin. Water-fowl of every kind—among them numbers of black swans—are to be found round about these lakes.

Scenery.

The views obtained from the railway-line in the ascent and descent of the Rimutaka Range are among the best in the neighbourhood of Wellington, and the road through the Forty-mile Bush was long considered one of the most beautiful drives in the North Island; but much of its pristine beauty has been destroyed by the felling of the bush consequent on the increase of settlement. The same may be said of the Manawatu Gorge, famed in the old coaching days for its lovely scenery, but now sadly marred by the construction of the railway-line. The most beautiful drive now left is through the Awarua Bush, from Ohingaiti to Moawhango. From this road, as it winds round the spurs, most charming glimpses are obtained of the Rangitikei River and the blue hills beyond, and at other points the traveller looks up deep ravines where the graceful fern-tree stands out in bright relief against the dark green of the native bush. Another road from Pipiriki, on the Wanganui River, to the Murimotu Plain, traverses one of the most magnificent forests in the North Island. Here the bushman's axe has felled only the timber standing on the road-line, and the track runs beneath the shade of the largest and stateliest maire and rimu known. Beautiful as these drives are, the scenery on the Wanganui River is still more lovely. A few miles below Taumaranui the river enters a series

of gorges, shut in by high precipitous cliffs. Sometimes the canoe glides slowly through quiet reaches, sometimes shoots rapids which make the traveller hold his breath till they are passed, and then again traverses places where the water is ever in turmoil, boiling and eddying in whirlpools, taxing the energies of the most skilful Native steersman, and testing the nerve of the most courageous tourist. These experiences, with the views obtained of the banks, densely wooded even where the papa rock rises almost straight from the water's edge, make the eighty miles journey from Taumaranui to Pipiriki an event not easily effaced from the memory. Between Pipiriki and Wanganui an excellent steamer is now running, so that the beauties of the lower part of the river may be seen by all without trouble or discomfort.

Forests.

The Wellington District is essentially a forest country, for out of the 6,000,000 acres contained within its borders 3,400,000 are still under bush. By far the largest forest is the Waimarino, having an area of at least three-quarter million acres, a large portion of it being nearly level land, containing magnificent timber, principally totara, maire, matai, rimu, and other pines. This forest is as yet hardly touched, though one sawmill has lately been started at Raetihi to cut timber for the settlers now making their homes in the neighbourhood. The distance from the settled districts or any port will render the timber in this part useless as a marketable commodity until the country is opened up by the proposed Auckland Main Trunk Railway.

The next in size is the Rangitikei-Hautapu Forest, containing an area of about 400,000 acres, a considerable portion in the Awarua Block being first-class milling timber, which will be available as soon as the extension of the Hunterville Railway-line taps it. Between this and the Waimarino Forest there is a large extent of bush land, drained by the Turakina, Mangamahu, and Wangaehu Rivers, extending up to the Wanganui River, and containing about 350,000 acres. Very little of this, from its inaccessibility, will be utilised for saw-milling purposes, but a great deal of it, together with a further block of 230,000 acres on the west side of the Wanganui River, will be cleared by the settlers and sown down with grass. A further block of about 100,000 acres of forest-land lies in the Pohangina Valley and on the slopes of the Ruahine Range. A large portion of this has been taken up and is now being settled.

The forest-land on the West Coast extends from Pukerua to the Manawatu Gorge, on the west side of the Tararua Range, and contains an area of about 380,000 acres, the bulk of it being fit only for turning into pasture. The most available part of it, alongside the Wellington–Manawatu Railway, is being extensively cut into by sawmillers at Levin and other places on the line.

After this in size is the forest commonly known as the Forty-mile Bush, containing 260,000 acres. It lies immediately north of Masterton, and is tapped by the Wairarapa Railway and the proposed extension to Woodville. It is at present being quickly denuded of timber by the sawmills established at Eketahuna and Pahiatua, and by the increasing number of settlers. A tract of fully 100,000 acres lying to the east of the Puketoi Range cannot be utilised for milling purposes, as it is not tapped by any branch railway-line, and its distance from the main line would render the business unprofitable. Nor are there any suitable ports along the coast where timber could be shipped.

The other forests are, one near Lake Taupo, the Wairarapa–Tararua Forest on the east side of the Tararua Range, and its continuation on both sides of the Rimutaka Range, and the Haurangi Forest on the east side of the Wairarapa Lake. These consist for the most part of birch-covered hills, and cannot be considered as valuable for milling purposes.

Soil.

It may be said that the Wellington Land District contains within its borders a greater quantity of good land than any other in the North Island, very little, except the mountain-tops, being unfitted for use, while some of it is of very superior quality, suited for the growth of the productions of every temperate climate. As much of it is still forest-clad, settlers must look forward to having to make their

farms by felling and burning the bush before grass can be sown, and, as it takes from ten to fifteen years before the plough can be used in bush-land, grazing, for which the climate and soil is admirably adapted, will be the principal industry for some time to come. It is generally calculated that the cost of felling and burning ordinary bush varies from 25s. to 35s. an acre. To this must be added about 20s. for seed and fencing. It is no uncommon thing for a return to be received at from twelve to eighteen months after felling. The usual practice is to put sheep on to the new lands soon after the grass has obtained a good hold. The process of improving the lands by the gradual "logging up" and burning of the fallen tree-trunks is a long one, but it pays in the end, for in this way fine pasture-lands are obtained on the hills, and agricultural lands on the flats.

Climate.

The climate of Wellington District is healthy and mild, the mean annual temperature (in the city) being 54·8, whilst the mean rainfall is 48·3in. per annum. The rainfall differs, however, according to locality. Inland and near the ranges it is much greater. The top of Ruapehu Mountain is covered with perpetual snow, which lies also on the tops of Kaimanawa, Ruahine, and Tararua in the winter. Frosts are heavy in the interior.

Harbours and Ports.

The coasts of Wellington are not so well supplied in this respect as are some other parts of the colony; but what is lost in number is made up in a great measure by the excellence of the chief haven—Port Nicholson—which, from the position it occupies, at the meeting-point, as it were, of the coastal traffic of both Islands, and from its sheltered position and depth of water, may be considered one of the most convenient harbours in the world. The Wanganui River, which has been considerably improved by artificial means, is the second port in the district, and has a considerable trade carried on by coastal steamers. Patea and Manawatu Rivers are also used by coastal steamers, whilst several other places along the shore afford shelter and stopping-places, according to the direction of the wind. The extension of railways along both coasts has, in a large measure, done away with the inconveniences arising from want of harbours.

Towns.

The capital of the colony—Wellington—is situated in the south-west angle of Port Nicholson, on Lambton Harbour. The wharfage accommodation here is second to none in the colony, and the wharves present always a busy scene of life with the numerous steamers and sailing-vessels continuously loading or discharging. As many as four ocean-going steamers are not unfrequently seen alongside, loading with wool, frozen meat, and other products, for conveyance to Europe. The port possesses a patent slip at Evans' Bay, within a short distance of the city. Founded in 1840 by the New Zealand Company, the city occupies the flats skirting the original shore-line, long since obliterated by the reclamation of the foreshore, which is now mostly covered with fine buildings. Rising close behind the old shore-line is a range of hills, the lower parts of which are all built over. The population of the city at the present time is about 38,600. Being the seat of Government, it contains the residence of the Governor and the head-quarters of the Government departments, which are placed in what is said to be the largest wooden building in the Southern Hemisphere. There are several noticeable public buildings, amongst which must be mentioned the Parliamentary Buildings, containing a valuable library, General Post Office, Government Life Insurance Offices, Public Library, School of Art, and Harbour Board Offices. The Colonial Museum, under the management of Sir James Hector, and the Botanical Gardens, are also worthy of notice. The city is lighted by electricity, and its streets are well kept and clean, whilst an excellent supply of water is obtained from the Wainui-o-mata River, on the other side of the harbour. The principal industries are represented by iron- and brass-foundries, factories, sawmills, soap-and-candle works, boot-factories, aërated water, meat-freezing works, coach-building, rope-and-twine works, sash-and-door factories, brick-, tile-, and pottery-works, besides a match-factory and innumerable other smaller works of various kinds. The city is increasing with rapid strides; its excellent position, together with the fine back-

country, places it in the front rank of New Zealand towns. Its principal suburbs are Onslow, Melrose, and Karori, each containing from 1,000 to 2,000 inhabitants.

The Township of Petone is situated near the mouth of the Hutt River, seven miles from Wellington, on the railway-line. It had last April a population of 2,685, and is a rising township, containing the Government Railway Workshops, a woollen factory, and a meat-freezing establishment. The Lower Hutt, almost immediately adjoining, has also a large population, and some well-built residences with beautiful gardens. The Upper Hutt, situated at the head of the valley, has many small farms, owned by some of the very early settlers. The railway here starts the ascent of the Rimutaka Range.

Featherston, situated at the foot of the Wairarapa Valley, fifty-one miles by rail from Wellington, is a small township, with butter and cheese-factories in the neighbourhood. Roads lead from it to Martinborough and the East Coast, and also down the Wairarapa Valley to Palliser Bay.

Greytown North is situated three miles off the main line of railway, and near the middle of the Wairarapa Valley, fifty-three miles from Wellington. The chief industries are saw-milling and coachbuilding. The population in April last was 1,129.

A few miles further north is the Town of Carterton, where are to be found timber-mills, cheese-factories, &c., and a population of 1,291 persons. There is some splendid farming land in this locality on the banks of the Ruamahanga River.

Masterton is situated at the head of the Wairarapa Valley, on the Wellington–Eketahuna Railway, sixty-seven miles from the capital. It is the centre of an agricultural and pastoral country, and has a population of 3,493. It is lit by gas, and has several industries, such as fellmongery, rope-making, flax-mills, coach-factory, &c., and, in addition, has some excellent fish-breeding ponds, from which many of the rivers in the colony have been supplied with trout. An important coach-road leads from here through a fine pastoral district to Tenui, and on to Castlepoint on the East Coast, where a large quantity of wool is annually shipped to Wellington for export.

North of Masterton is the Opaki Plain, and beyond is the entrance of the Forty-mile Bush, which is now fast becoming a thriving pastoral, agricultural, and dairying district. Butter-factories have been established at Hastwell and Mauriceville, where a large number of Scandinavians are settled, forming hard-working and thriving communities.

Eketahuna is the present terminus of the Government Railway, ninety-four miles from Wellington. From there a main road leads to Alfredton, and up the Tiraumea Valley. The road is in process of extension through the east Puketoi country, now being opened up in farm-homestead settlements, and will eventually lead to Weber and Dannevirke, on the Napier Railway-line.

Pahiatua, a rising township about fifteen miles beyond Eketahuna, has a resident population of 1,200. It is the county and market-town of a large and improving district, and will probably also become the centre of a large dairying industry. Coaches run daily from Eketahuna through Pahiatua, and eleven miles farther on to Woodville, where they connect with the main railway-line. Several branch roads run from Pahiatua into the adjoining country, the principal one leading to Makuri through a beautifully-wooded gorge. From there another branch road passes over the Makuri saddle into the East Puketoi country.

On the West Coast, Pahautanui, at the head of the Porirua Harbour, is the centre of a small agricultural community of early settlers, the old coach-road to Paikakariki running through it; and there is a branch-road leading over to Hayward's in the Hutt Valley. Paikakariki, twenty-seven miles from Wellington, may be considered the commencing-point of the West Coast settlements, which are springing up in every available valley along the coast. At Otaki, forty-seven miles from Wellington, there is a small township, and a large Native settlement. At Manukau, Levin, and Shannon, small townships have arisen since the Manawatu Railway Company opened up the land round about, much of it being rich farming and grazing country. Between Shannon and the Manawatu River there is a large raupo or flax swamp, named Makurarua, containing at least 15,000

acres of fine alluvial soil, which is being gradually drained by the company, and will at some future period become the finest possible grazing-land.

Foxton, a township at the mouth of the Manawatu River, is a small shipping port, containing about 1,100 inhabitants. It is connected with Palmerston by a branch railway, and is the outlet for a large area of good agricultural land.

Palmerston North is an inland town at the junction of the Wellington–New Plymouth and the Palmerston-Napier Railways, situated on a fine plain in the midst of a most excellent farming district at a point eighty-eight miles from Wellington, and 110 miles from Napier. Its population at the present time is upwards of 5,900. It is lit with gas, and has a good water-supply. A fine bridge across the Manawatu River connects it with the Fitzherbert Block, a tract of rich agricultural land. Nine miles from Palmerston is the Township of Ashurst, at the mouth of the Pohangina Valley, up which settlement has now extended for a distance of twenty-two miles. Several large farm-homestead association blocks have been selected up this valley.

Feilding, 104 miles from Wellington by rail, with a population of 2,045, is becoming one of the most important towns on the West Coast, as it is the centre of a very fine locality, and the outlet for a large tract of inland country, the forest on which is fast being felled. A coach-road connects it with Birmingham and Pemberton, about thirty-two miles distant. On the seaward side for a distance of twenty miles there is also much good agricultural land, extending on the north-west to the Rangitikei River, and including the Township of Halcombe. There are several dairy factories established in the neighbourhood.

Marton, 123 miles from Wellington, with a population of 1,151, one of the earliest of the West Coast settlements, is also the centre of an agricultural country. The Township of Bulls, on the north side of the Rangitikei River, lies between Marton and the coast. From Marton Junction the southern part of the North Island Main Trunk Railway extends up the Rangitikei Valley to Hunterville, a good-sized township in the centre of a grazing district, and from thence as far as Mangaonoho, twenty-three miles from Marton; from there a coach-road has been made to Ohingaiti, beyond the Makohine, where a large viaduct has to be built before the railway-line can be continued. From Ohingaiti the coach-road has been made to Turangarere, and from thence to Tokaanu, on Lake Taupo, in the Auckland District.

Wanganui, situated near the mouth of the river of that name, is the oldest town after Wellington, from which it is 151 miles by rail—the distance by sea being only a hundred miles. It is the centre of an excellent farming district, and has a considerable trade, and several manufactories. Near the mouth of the river are freezing-works, the meat from which is conveyed by lighters to the large English steamers lying off the mouth of the river. The town is lit with gas and has a good water-supply. Not far from it are some extensive railway workshops. Altogether it is a thriving place, with a population of about 6,000. The Wanganui River is navigable for a light-draught steamer up to Pipiriki, a distance of eighty miles, and for canoes a further distance of eighty miles to Taumaranui. A branch road extends from Pipiriki through the Waimarino Forest to Ohakune, and on to Karioi on the Murimotu Plains, thence by way of Turangarere and Moawhango to Napier.

Crown or Native Lands available for Future Settlement.

On the east side of the Wairarapa Lake there are 43,000 acres, known as the Dry River-Haurangi Block, but this land can be considered only second-class pastoral country. It has not been opened for sale yet, owing to the difficulty of getting proper access into it.

About 20,000 acres at the head of the Makara River, and adjoining the White Rock Station, will be surveyed and opened for selection, as second-class grazing-country.

On the west side of Carterton and Eketahuna three blocks, called Kaitangata, Te Mara, and Kaiparoro, containing about 58,000 acres of second-class pastoral country, have lately been opened up for sale. The lower portions have been taken up and are being settled, but there is some 20,000 acres still open for application. There is a further area of 155,000 acres in the Tararua Mountains, some of the valleys in

which may eventually be settled, but the difficulty of getting roads into it is too great to be undertaken at present.

Farm Homestead Sections.

On the 1st of April, 1896, there was open in the East Puketoi country, for selection under the general provisions of "The Land Act, 1892," in sections ranging from 100 acres to 200 acres, classified as first-class agricultural land, about 15,000 acres, and 7,100 acres of second-class pastoral land. A further block of 6,700 acres, mostly second-class pastoral land, will shortly be opened in the Rising Sun Block, adjoining the Hawke's Bay boundary-line. In the Feilding district there were about 8,300 acres, in the Pohangina, Salisbury, Onslow, and Marton Blocks, declared open for selection; and also in the neighbourhood of Hunterville, in the Palmerston North Knights of Labour, Sommerville, and Hunterville Blocks, about 11,300 acres, and in the Waimarino country, in the neighbourhood of Raetihi, and on the Gladstone Block, about 6,300 acres. A good many of these sections have since been taken up, but a large number are still open for application, which will be further supplemented by sections since forfeited for non-compliance with the conditions of the leases.

Improved-farm Settlement Lands.

Four thousand four hundred acres have been subdivided into 100-acre sections in the East Puketoi country, and 2,200 acres in the Sommerville Farm Homestead Association Block. These have been balloted for amongst applicants in the district who are known to be of good character and likely to make good settlers. Further blocks of suitable land, as required, will be cut up and opened on the same conditions.

Lands Open and Available for Ordinary Selection.

Out of the Awarua Block, lying north of Ohingaiti, several blocks, containing over 140,000 acres, have lately been purchased from the Natives by the Crown. A great deal of this land is of first-class quality, though other parts will be treated as second-class land only—not that the soil is inferior, but because the land is too broken to be worked otherwise than as pastoral country in good-sized holdings. Several blocks have lately been surveyed; one of 15,000 acres west of Mangaweka, or Three-Log-Whare Township, was opened for sale last year, and subsequently another of 7,500 acres between the Hautapu and Rangitikei Rivers. A further sale of quarter-acre sections in the Mangaweka Township has taken place, and the Taihape Township will be subdivided into town or suburban lots, of which some will be offered for sale in the autumn. A block of 12,500 acres lying south-east of Moawhango was opened for application, and this has all been taken up. Further purchases in the Awarua Block, to the extent of about 97,000 acres, have been made, and the surveys are being put in hand, and the bulk of the country will probably be opened for selection during 1897.

North of the Kawatau, on the east side of the Rangitikei, a block of 17,173 acres of second-class pastoral country was opened for selection in February, most of which is still open for sale, and a further area will be roaded and prepared for sale during the summer.

Waitotara.—The Te Ngaue Block, 1,546 acres of second-class pastoral land, is now open for selection.

Waimarino.—Three blocks, containing about 10,000 acres, have had road-lines laid out through them, and are now open for application. A further block of about 46,550 acres, on the Retaruke, Oio, and Kaitieke Rivers, has had roads surveyed through it, and is now open for selection. There is an additional block of 27,000 acres, which is being surveyed, and will be offered as grazing-runs. 32,000 acres at the head of the Retaruke and Makino Streams have also been roaded. The rest of the Waimarino country, containing about 250,000 acres, is more or less broken, and will probably be opened as second-class pastoral country or small grazing-runs to enable it to be taken up in larger sections.

Tongariro, Rangipopo, and Kaimanawa Blocks.—105,000 acres have been acquired by the Crown, but none of it is likely to be taken up for settlement for a long time to come.

Native Lands.

Townships are now under survey at Pipiriki and Tokaanu, sections in which will be opened for leasing under "The Native Townships Act, 1895."

The allocation of the Crown's purchases in the Raetihi, Tauakira, Maungakaretu, Mangapapa, Raketapauna, Rangiawaea, and Ngaurukehu B. Blocks, has been made by the Land Court; and the survey of the land allotted will be put in hand early next season, and should be available for settlement during 1897.

The blocks under lease to Europeans contain about 475,000 acres, the principal being the Murimotu, Rangipowaiau, Owhaoko, Mangohane, and Ruanui, occupied by Mr. Studholme; and the Oroumatua, leased to Mr. Birch. Of others passed through the Native Land Court there are about 526,000 acres which are fit for settlement, the principal being the balance of the Awarua and the Motukawa, Raketapauna, and Rangiwera Blocks in the central district, Raetihi in the Waimarino district, and Tauakira on the Wanganui River. Those not suitable for settlement at present are the Te Hautu, Ohuanga, and Kaimanawa, on the east side, and the Oahukura on the west side, of Tongariro Mountain, containing an area of about 345,000 acres.

The Native lands which have not passed the Native Land Court contain an area of about 140,000 acres, the principal being the Tupapanui and Mairekura Blocks, between the Wangaehu and Wanganui Rivers, and some others on the west side of the latter river.

Pastoral and Agricultural Industries.

The pastoral industry is by far the more important, the total area in grass in 1896 being 2,079,034 acres as compared with 75,426 acres under crop. Of the area in crop 7,400 acres were in wheat, 18,627 in oats, and 27,827 acres in turnips or rape, the rest being in potato or other crops.

The following figures will show the average return per acre of grain, &c., for the year 1896: Wheat, 26·00 bushels; oats, 30·00 bushels; barley, 30·00 bushels; hay, 1·50 tons; potatoes, 7·66 tons.

The area in sown grass now exceeds that in any other district in the colony, though the area under crop is very small as compared with either the Otago or Canterbury Districts. In 1895 there were 3,633,514 sheep, and in January, 1896, the cattle numbered 206,857, and horses 39,386. The total area in gardens is given as 2,805 acres; in orchards, 2,987 acres; and in plantations, 2,561 acres.

Dairy Industry.

Both soil and climate are well adapted for the production of butter and cheese, and hence we find creameries and butter-factories increasing in number very considerably each year, and the export constantly augmenting.

Eighteen butter- and cheese-factories were returned in April, 1896, as at work in the Wellington Provincial District.

Phormium Tenax.

The principal flax-mills working are at Featherston, Carterton, and Martinborough, in the Wairarapa, and at Foxton on the West Coast. This industry fluctuates greatly, in accordance with the price ruling for the dressed article. In 1896 thirteen mills were at work, employing 207 men and 35 boys; the machines driven by water-wheel or engine working up to 124-horse power.

Timber Industry.

Sawmills are to be found in different parts of the district where the means of communication are sufficient, the timbers cut being principally totara and red pine, both of which are largely used in house construction and other works. Others of the native woods are very beautiful, but are utilised only to a small extent.

The principal mills are at Pahiatua, Eketahuna, Masterton, and Carterton, in the Forty-mile Bush and Wairarapa districts, and at Levin on the West Coast, besides which there are several mills in Wellington for dressing the rough material. In the whole district there were in 1896 sixty-four mills, of an aggregate of

1,117-horse power, engaged in this industry, employing 975 hands, the output of sawn timber being 34,605,504ft., and the total value, including posts and rails, resawn timber, doors, sashes, &c., £157,107, which, next to Auckland, is the highest for any provincial district in the colony.

THE MARLBOROUGH LAND DISTRICT.

By H. G. Clark and Sidney Weetman, Chief Surveyors.

Boundaries.

The Marlborough Land District, occupying the north-east corner of the South Island, and containing about 2,560,000 acres of land, is bounded generally on the north and east by Cook Strait and the East Coast as far as the Conway River; thence by that river to its source; from this point, by straight lines, rivers, and the summits of watersheds to the western side of Tennyson Inlet, Pelorus Sound. From the Conway to Pelorus Sound it abuts on the Land District of Nelson.

The widest part of the district is from Cape Campbell to Tophouse, a distance of about sixty-seven miles.

Physical Features.

The district throughout is generally mountainous, but none even of the highest peaks are covered with perpetual snow, although Tapuaenuku, the highest of the Inland Kaikouras, attains an altitude of 9,462ft. Of the Seaward Kaikouras, or Looker-on Mountains, the highest points are Kaitarau and Whakari, which are 8,700ft. and 8,500ft respectively. There are several lesser peaks, from 4,000ft. upwards.

The view from Kauhautara Bluff, south of Kaikoura Settlement, looking northwards, when the Looker-on Mountains are snow-capped, is said to be one of the finest in New Zealand.

Geologically, the district may be briefly described as follows: North of the Wairau River the rocks belong chiefly to the Upper and Lower Devonian series, with a belt of Silurian between them, embracing the country along the west of Queen Charlotte Sound to Cook Strait. Within these series auriferous deposits are found, and at present worked at Mahakipawa, Wakamarina, and Wairau Valley. In Endeavour Inlet an antimony-mine has been worked for some time. The country south of the Wairau River may be said to belong chiefly to the Carboniferous Age, with patches, along the coast and up the Clarence Valley, of Cretaceo-Tertiary and Lower Greensand formations; while along and between the Awatere and Clarence Rivers volcanic formation and numerous intrusive dykes occur. The Red Hills also, at the head of the Wairau Valley, are of volcanic origin.

Coal has been discovered in the neighbourhood of Picton, and in the Clarence Valley, but none has been as yet successfully worked within the district. A narrow belt of Tertiary limestone, suitable for building purposes, extends, with small interruptions, from Cape Campbell to the boundary of the Canterbury Provincial District. The Marlborough land may be divided into three classes: Open land, generally covered with associated grasses; forest-land; and intermediate, or land partly forest, partly covered with scrub, fern, or other rank vegetation. This original condition of the soil naturally gave rise to a localisation of industries, and a very unequal distribution of settlement. Thus the open country was taken up for pastoral purposes; in the forest country the timber industry was developed, and the intermediate land passed into the hands of farmers. Though agriculture is now extending into the pastoral and forest country, and considerable areas of forest-land have been cleared and laid down in grass, the portions of the district characterized by these respective industries are still well defined.

In the northern part of the district, bounded by Cook Strait, numerous deep fiords and bays run far into the land. The principal of these are Queen Charlotte and Pelorus Sounds, which are remarkable for the number of their reaches and inlets, and the beauty of their precipitous and forest-clad hills, culminating in Mount Stokes, 3,943ft. above the sea.

Rivers.

Four considerable rivers, the Wairau, Awatere, Clarence, and Conway, rise towards the western boundary of the district; the two former, running east and north, fall into Cook Strait; the two latter, taking a southerly and easterly course, discharge into the sea on the eastern side of the Island. These rivers water large and fertile valleys, but none can be entered by vessels except the Wairau, which is navigable for small steamers for about ten miles from its mouth.

Plains.

The Wairau Plain, containing about 65,000 acres, on which stands Blenheim, the capital of Marlborough, is the principal block of agricultural land within the district. The soil, generally good, is, on the lower or seaward side of the plain, extremely fertile, especially near Blenheim, which is surrounded by numerous fine gardens, well sheltered with trees. The average yield of wheat for the plain is about 20 bushels per acre; of oats and barley, 30; of peas, 30; and of potatoes, 6 tons per acre. Hops have been successfully grown for many years in the neighbourhood of the town, but, owing to the high price of labour, their cultivation has not extended. The plain, traversed in all directions by good macadamised roads, and dotted over with numerous homesteads, standing in clumps of trees amidst well-cultivated fields, has already an old-world appearance. More than half the population of the Marlborough Land District—12,483, according to the last census—is centred in the Town of Blenheim and on the Wairau Plain. Besides this plain there are several thousand acres of terrace flats and valleys along the larger rivers, notably at Starborough, on the Lower Awatere.

Lakes.

There are not any lakes worthy the name. The largest is Kapara te Hau, more familiarly known as Grassmere, situate on the coast between the Awatere River and Cape Campbell. It is about three miles in diameter, and very shallow, being, indeed, no more than a lagoon, as during a dry season there is little or no water in it.

The only other known lake is Lake McRae, situate in the open country between the Awatere and the Clarence Rivers.

Forests.

The portion of Marlborough north-west of the Wairau River, extending to the boundary of the Nelson Land District, and including the County of Sounds, in all about 280,000 acres, was originally covered with dense forest. In the valleys and on the lower hill-slopes, rimu, kahikatea, matai, totara, miro, and tawa were the principal forest-trees. The higher portion of the hills and steep spurs are clothed with the various species and variety of birch (beech), to which along the shores of the Sounds were added pukatea and kohekohe, the latter locally called cedar.

Since 1860 sawmills have been at work in various parts of the district. Thirty-two mills have been erected, and have worked for longer or shorter periods. Havelock, on the Pelorus Sound, is at present the head-quarters of the timber trade.

The hills along the shores of the Sound will, for many years, furnish birch sleepers. There are other timbers left in places, but nowhere sufficient to justify the erection of a mill, unless pukatea wood, hitherto neglected, could be utilised. It is a light, tough timber, well adapted for packing-cases. The quantity of pine timber remaining in the Kaituna and Onamalutu Valleys is small, but there is a good supply of birch and other wood, suitable for fencing and firewood. On these valleys the Wairau Plain is mainly dependent for timber.

The Pelorus Valley, with its tributaries the Rae and Wakamarina, still contain about 200,000,000ft. of convertible timbers, exclusive of the birch, of which there is a large amount of the best quality on the hills and terraces.

In the neighbourhood of Kaikoura, along the base of Mount Fyffe, and in the Hapuku Valley, there is another small block of forest-land in which three small sawmills have been erected. The quantity of timber suitable for sawmill purposes in this block is very limited, but it will furnish the neighbouring country with firewood and fencing for many years.

During the past year about 2,500 acres of forest have been cleared and grassed.

Soils and their Uses.

The Wairau Plain, which is the principal block of agricultural land, has been already dealt with. The second agricultural centre is in the neighbourhood of Kaikoura. The land extending along the base of Mount Fyffe, between the Kohai and Hapuku Rivers, about 13,000 acres in extent, is held in small or moderate-sized farms; the soil is good, the block known as "The Swamp," between Mount Fyffe and the Peninsula, being particularly rich. In the Pelorus, Kaituna, and Onamalutu Valleys, and in the Sounds, settlers following in the wake of the sawmills have already converted much of the land worked over into grazing-farms. The land is of three descriptions—alluvial flats, terraces, and hill-sides. On the flats in the larger valleys the soil is rich, producing heavy crops of oats, peas, beans, and potatoes, wherever it has been brought into cultivation. The terrace-land varies much in quality, but generally grows good grass, as do also the hills on which tawa formerly grew; the birch country being very barren. On the small bush-farms cattle-grazing is the chief pursuit. Out of over 11,700 head kept in Marlborough, 7,000 belong to the forest country.

Grazing.

About 1,680,000 acres of the Marlborough Land District are at present devoted to keeping sheep; in this are included 883,000 acres of Crown land, held under leases that will expire for the most part in 1896. The leaseholds in the northern parts of the district contain a large extent of scrub- and fern-covered country, now producing little or no food for sheep, but capable of improvement. The total number of sheep depastured is 848,513, distributed as follows amongst the counties into which the land district is divided: Marlborough County, 538,718; Sounds County, 112,186; Kaikoura County, 197,609. On the natural pasture of the open country merino sheep are kept almost exclusively, the land carrying from half to one sheep per acre. In the forest country, on sown grass, the land keeps from two to four crossbred sheep per acre. Along the shores of the Sounds large areas of hill-land have been taken up on lease, and are now being cleared and laid down in grass expressly for keeping sheep, but generally throughout the forest country the holdings are small or of moderate size, hence this is, after the Wairau Plain, the most populous portion of the district. The export of wool during last year amounted to 15,500 bales.

Industries.

Gold-mining has been carried on for some years, principally at Mahakipawa, Wakamarina, and Wairau Valley, but at present not much gold is being obtained.

At Endeavour Inlet, in Queen Charlotte Sound, the Star Antimony Company has been at work for some years, but has lately ceased working.

There are at present four sawmills at work within the district: one at Kaikoura, and the others in the Pelorus, Kaituna, and Onamalutu Valleys. The principal one is Messrs. Brownlee and Co.'s, in the Pelorus Valley, the annual output being about 3,000,000 superficial feet. The value of the sawn timber shipped in 1895 from the company's wharf was £8,300. The mill at Kaikoura turned out 120,000ft.

Owing to the low price of dressed flax several of the mills have recently been closed, there being only four or five now at work. The quantity of hemp shipped during the year was 1,000 bales.

In connection with one of the mills, a rope-factory has been established, in which binder-twine made of short flax or tow is the main product.

There are two flour-mills at work—one at Spring Creek, near Blenheim, owned by Messrs. Redwood Bros. This is a complete roller-mill, driven by water-power, and can turn out about 14 tons of flour in twenty-four hours. It is electric-lighted, and the sack-working machinery is driven by electric motor. The mill is not worked

eameries.

rabbit-preserving factory has lately been reopened at Blenheim

Climate.

he original distribution of the open and forest lands of M
y due to climatic causes. At Cape Campbell, one of the bares
t, the annual rainfall is only 23·25in.; in the Pelorus Valley, th
country, it is over 65in. This difference between the climate
n and south-eastern portions of the district explains why the ar
when compared with the natural pasture, supports such a la

Winter and spring are the wettest seasons, hence the dry cli
able for agriculture. Wherever the soil is suitable, crops sow
ted in early summer can be successfully grown. Everywhere
nge of temperature, considering the latitude, is very small. Th
falls below 30deg, or rises above 78deg. Along the shores of
ss of the winter, owing to the curious distribution of land an
, oranges, passion-fruit, figs, and other sub-tropical fruits t
able situations. On the lower hills and terraces of the fore
ut (*Castanea vulgaris*) grows rapidly, and commences to bear
rs. A few trees planted in the Pelorus Valley some twenty yea
g annually about 2cwt. of nuts a tree. In all parts of the l
n English fruit-trees—apple, plum, pear, cherry, &c., yield a
owing to the clearness of the atmosphere, being of excellent q
ountry, where snow falls occasionally during winter, red, wh
ts can be produced in such quantities that with little labour
an article of export to the warmer parts of Australia.

Towns.

he chief town, Blenheim, is situate on the Wairau Plain, at the
and Omaka Rivers—a third river, the Taylor, would join at
were it not that when not in flood it disappears beneath the
miles south of the town. Blenheim has been termed a miniatur
ess from its extreme flatness. Considering this, its streets a
d and lamentably narrow. It does not possess any public or
of note. It is, however, well planted with deciduous and
help much to relieve an otherwise monotonous appearance. It is
half miles from Picton by rail, and about nine miles from the se
which is navigable for small steamers. Blenheim is lit with ga
vater, principally by artesian wells. The population at the l

he next town in importance is Picton, the principal port, only f
from Wellington. This little town, both in position and appe
be the antithesis of Blenheim, being most picturesquely situa
en Charlotte Sound, and nestling among hills, some of the h

quantity of oysters, mostly procured in Queen Charlotte Sound, is annually exported from Picton; with culture the supply might be almost indefinitely increased, many of the sheltered bays in both sounds being well adapted for the purpose. What is now being done along the Marlborough coast is a mere trifle compared with what might be accomplished if capital and knowledge were brought to bear on the fishing industry. Around the whole coast, from the mouth of the Conway to near the French Pass, the sea abounds in fish. Within the Sounds and amongst the islands of Cook Strait, hapuku, schnapper, moki, barracouta, raturi, kahawai, and rock-cod are extremely plentiful. Immense shoals of the southern herring (*Clupea sagax*) and of anchovies (*Engranlis encrasicholus*) frequent the inlets at certain seasons of the year, and quantities of fresh fish are exported from thence to various places within the colony. As steamers arrive at and leave Picton almost daily, shipments can be made without delay to all parts. Picton possesses a good gravitation water-supply. Its population is about 870.

Havelock, situate at the head of Pelorus Sound, is, as has been already stated, the present head-quarters of the timber trade, Messrs. Brownlee and Co.'s steam saw-mill, at the mouth of the Pelorus River, being only a mile or so from the town. A steamer runs fortnightly between Havelock and Wellington, delivering mails at Ketu Bay, Maud Island, Homewood and Maori Bay, all in Pelorus Sound. In addition a small steamer has lately commenced running within the sound, which also receives a weekly mail from Picton, conveyed by steamer to Torea, in Queen Charlotte Sound, and thence overland and by boat to Kenepuru and Manaroa. Between Picton and Havelock there is a service twice a week, *viâ* Cullensville, on the Mahakipawa Goldfields. The population of Havelock is about 365.

The Town of Kaikoura, the greater part of which is built on a raised shingle-beach, is situate at Kaikoura Peninsula, near the southern boundary of the district. The town, with the adjoining settlement of small farms, forms one of the most picturesque spots in New Zealand, lying as it does under the Seaward Kaikouras, or Looker-on Mountains. At the back of the town the peninsula, which is composed of Cretacco-Tertiary limestone, rises abruptly for about 100ft., and affords splendid sites for dwelling-houses. Kaikoura is connected with Blenheim by a weekly coach service, the distance being about ninety-five miles. There is also direct steamer-communication with Wellington and Lyttelton. The population of the town is about 395.

Roads and Railways.

The only railway is that between Picton and Blenheim, about eighteen miles and a half in length. The train starting from Picton runs twice a day, and three times on Saturdays. The railway has been completed for a distance of three miles south of Blenheim—as far as the racecourse at Riverlands, whither the train runs on race-days.

The main north road to Nelson—distant seventy-eight miles—is a good metalled road nearly the whole way. It runs up the Wairau Valley from Blenheim for about six miles, crosses the Wairau River into the Kaituna Valley, which it follows as far as Havelock—about twenty-eight miles. It then runs up the Pelorus and Rae Valleys, and ascends by easy gradients to the Brown Saddle, where it crosses the boundary into Nelson. An excellent coach-service—probably the best in the colony—has been established for some years, the coach running to and from Nelson on alternate days, covering the distance in eleven hours.

The main south road, running over the Taylor Pass into the Awatere Valley, and through the Starborough, Flaxbourne, Kekerangu, and other properties, connects Blenheim with Kaikoura and the south, and is a good road during dry weather, although it might be much improved in places.

The portion between the Clarence River—over which a fine bridge was built some years ago—and the Hapuku River runs along the coast under steep and picturesque hills covered with forest. Were a road constructed south of Kaikoura to connect with Cheviot it would open up some of the most beautiful coast scenery in New Zealand.

A good road has been formed up the Wairau Valley, passing through the Bank-house, Erina, Lansdowne, Hillersden, and Birch-hill properties, and connecting

with Tophouse, just outside the boundary, and distant fifty-six miles from Blenheim. At Tophouse there is an hotel and a telegraph-station, and from thence a good road leads to Belgrove, the present terminus of the Nelson Railway.

A coach runs twice a week between Blenheim and Wairau Valley—twenty-five miles—where there is an hotel, a post- and telegraph-office, and one or two stores.

There is also a good cart-road running up the Awatere River—which it crosses and recrosses several times—as far as Molesworth Station, about seventy miles from Blenheim. Between these points there is a weekly coach- and mail-service.

There are other minor roads and bridle-tracks throughout the district too numerous to specify.

The area of Crown lands at present available for settlement is about 214,073 acres, but of this area 135,000 acres are of very poor quality, being chiefly the summits of high, rugged country, and not likely to be taken up until it has been brought in with portions of the Marlborough waste-land leases, which for the most part expire in 1896. The balance of available area lies principally in the Pelorus, Rae, and Wakamarina Valleys, and in the Sounds, and will doubtless be readily taken up when thrown open for selection.

THE NELSON LAND DISTRICT.

By J. S. BROWNING, Chief Surveyor.

General Physical Description.

The Nelson Land District comprises the north and north-western portion of the South Island, the greater part being high and mountainous, and on the western and inland ranges covered with dense forest to the bush-limit, at from 4,000ft. to 4,500ft. Cape Farewell, the northernmost point, is situate at the western entrance of Cook Strait, on the south side of which lie Golden or Massacre Bay, and Tasman Bay, more commonly called Blind Bay. The former derives its name from the massacre of a boat's crew belonging to Tasman, who visited it on the occasion of his discovery of New Zealand in 1642. At the head of the latter, which has a depth of fifty-four miles from its entrance, stands the town of Nelson. From Separation Point, on the western side of Blind Bay, a range of mountains from 3,000ft. to 4,000ft. in height extends southward to Mount Murchison. It consists of a granitic formation, with slates, limestone, and sandstone belts. From Pelorus Sound, on the east, commences another range—a portion of which is serpentine, forming a mineral belt immediately south of Nelson City. It reaches an elevation of 6,000ft., and runs in a south-westerly direction to the St. Arnaud Range, terminating in the Spencer Mountains, a large central mass attaining a height of 8,000ft. above the sea-level. To the westward of the Spencer Ranges and those on the further side of Blind Bay are the Brunner, Lyell, Marine, and Tasman Mountains, from 5,000ft. to 6,500ft. in height. Still further westward along the coast are the Paparoa, Buckland Peaks, and Papahaua Mountains, about 4,500ft. at their highest point, and the Whakamara Range, extending from Rocks Point to Cape Farewell. There are also a number of isolated mountain-masses here and there through the district.

The inland Spencer Mountains are the source of the principal rivers of the district south of the Buller River, and are thus described by Sir Julius von Haast: "On the southern slopes of this wild alpine-stack we find the principal sources of the Grey, or Pohaturoha; on its north-east side the sources of the Wairau; on its eastern side those of the Acheron and Clarence; and in the deep recesses of these snow-clad giants those of the Waiau-ua, or Dillon: so we may say that, with the exception of the Takaka and Aorere, which fall into Massacre Bay, the Wangapeka and Motueka, which run into Blind Bay, the Karamea and smaller streams, which reach the sea on the West Coast to the north of the Buller River, all the rivers of any size in the northern part of this island take their rise in this magnificent chain."

Rivers.

The Buller River (Kawatiri) has its source at a point about sixty miles south-west from Nelson, where it flows out of the beautiful alpine lake Rotoiti, lying 1,800ft. above sea-level at the foot of the lofty St. Arnaud Range. This river breaks through the massive mountain chains of the interior in a transverse or easterly direction, forming, where it receives no tributaries, a succession of magnificent rocky gorges, and, after a course of about one hundred miles, finally discharges its waters into the ocean on the West Coast. The Gowan River, a tributary, has its source in another exquisite lake, Rotoroa, 1,623ft. above sea-level. Other tributaries of the Buller are: the Matakitaki, Maruia, Owen, Matiri, and Inangahua, all of which take their rise in the snowy ranges.

The Grey River (Mawhera), also discharging its waters on the West Coast, takes its rise in Lake Christabel, near the western flank of the Spencer Range. It has a very large basin, and numerous tributaries, of which the Ahaura is the chief.

The rivers on the eastern side, named above as taking their rise in this district, flow for the most part through mountain ranges and open valleys utilised as pastoral land.

Lakes.

The lakes of the district are alpine in character, surrounded by grand mountain and bush scenery. The principal are: Rotoiti, lying east, and Rotoroa south-east, of Mount Murchison; Matiri, to the west of Owen Range, 980ft. above the sea; Lakes Tennyson, 3,614ft., and Guyon, 2,658ft., on the eastern flank of the Spencer Mountains; Lake Christabel, on their western flank; Lake Hochstetter and Lake Sumner, the latter 1,725ft., lying under Mount Emerson, 6,000ft. above sea-level.

Plains.

The plains of this district are limited in extent, the principal being the Amuri, in the valleys of the Hurunui and Waiau-ua, in the centre of which rises a partly isolated mass of hills called the Percival Ranges, the highest peak of which is Mount Percival, 5,335ft. These plains, being well covered with native tussock-grass, were either purchased or taken up with pre-emptive rights as pastoral land very soon after the commencement of the settlement. The Waimea Plains, near Nelson, with the Lower Motueka, Riwaka, and Takaka Valley lands, formed part of the original settlement of the New Zealand Company, and are occupied mostly by small settlers. Inland are the Tiraumea Plains, 1,100ft. above sea-level, and the Maruia, 1,300ft. These are, together, about 30,000 acres in extent. They are surrounded by high mountains heavily timbered, and the land is of only second-rate quality. On the West Coast the level lands are Totara Flat and Ikamatua Plains, in the Grey Valley, Mawhera-iti, and Inangahua Valleys, lying on the eastern flanks of the Paparoa coastal range. There are also open *pakihis* at Addison's Flat, on the south side of the Buller, and low swampy lands on the north side; northward is the heavily timbered country of the special settlement at the mouth of the Karamea.

Forest.

The area of the district is estimated at about 7,000,000 acres, of which the area of open land under 2,000ft. in altitude is, approximately, 1,835,000 acres; the area of forest-land under 2,000ft., about 1,745,000 acres; open land over 2,000ft., about 1,470,000 acres, including summits. The forest-lands may be approximately estimated at 3,290,000 acres, including good forest, mountain-forest, timber patches in gullies, &c. Of this area probably about 1,000,000 acres would be the utmost available for clearing. The timber on the western side consists of red- and white-pine, matai (or black-pine), totara, kawhaka (or cedar), rata, and occasional silver-pine, besides black- and red-birch (*Fagus fusca*). These varieties are also found, but in smaller areas, on the eastern side; birch preponderating. A large amount of timber is used in the mining industry for props and planking, and throughout the districts generally for shingles, fencing, firewood, sleepers, &c. There are forty-two sawmills at work, with an output of about 9,000,000 superficial feet per annum.

Agricultural.

Nelson has little land suitable for agriculture, most of it already taken up. On the Waimea Plains is grown excellent barley, a small quantity of which is exported. Oats and chaff are sent in large amounts to the West Coast and elsewhere. Hops also form one of the chief exports. Wheat, maize, rye, and root-crops of most varieties are grown, and fruit is plentiful. The weekly wage of a farm-labourer is 20s. with board; without board he would receive 6s. a day. Ploughmen can get 25s. per week with board; without, 7s. 6d. a day.

Pastoral.

The total area of pastoral lands held under the Crown by 120 tenants on the 31st March, 1896, amounted to 558,793 acres. The winter of 1895 in the mountainous districts having been very severe, and the fall of snow unprecedently heavy, caused great losses amongst the flocks of sheep, to relieve which the House of Representatives passed a Bill entitled the Pastoral Tenants' Relief Act, granting consolidated leases for a term of twenty-one years under reduced rentals, and remission of certain rents and sheep-tax. As the agricultural land is limited, settlers are turning their attention to the timbered mountain-slopes for grazing purposes. These, when the timber is felled and burnt, and the ground sown with suitable grass, will, after three to four years, carry about two sheep to an acre on fair soil, and more on the limestone country. The cost of felling and burning green timber is from 15s. to 20s. per acre; cost of mixed grass-seeds and sowing, about 15s. per acre; and a good paling-fence on ordinary bush-lands with double No. 8 wires at top and bottom, with ½in. palings and 7in. posts sunk 2ft. in the ground, can be erected at about 12s. per chain.

Mining Portion of District.

The western side of the Nelson District was a *terra incognita* till about the year 1863, when gold was first discovered in large quantities. Miners flocked in at first from the other goldfields in New Zealand, then from Australia, California, and other parts of the world, until in 1865 the whole coast-line was peopled from Broken River in the north to Jackson's Bay in the south. Mining, at first altogether alluvial, developed into quartz-reefing, and hydraulic-sluicing of large areas. The agricultural lands about the Grey and Inangahua were taken up and cultivated; and, as mining became a more settled industry, the miners occupied and tilled the non-auriferous alluvial flats in the many valleys: hence at the present time a number of homesteads are scattered throughout the district.

Reefton and its neighbourhood forms one of the chief quartz-mining districts in New Zealand; and the West Coast, including Westland, contributes about 45 per cent. of the total gold raised in the colony. The oldest alluvial field is at Collingwood. Among other minerals found in the district are: silver, copper, chrome, antimony, manganese, and hæmatite. Extensive deposits of coal are found on the West Coast, within the areas of the Grey and Buller Coalfields Reserves. Coal is also found in Collingwood, in Blind Bay, and in West Wanganui Inlet; and there are numerous smaller areas of coal-bearing strata here and there throughout the district. The output from the mines at work within the district during the year ending 31st December, 1895, was 371,420 tons. Copper-ore is found in a serpentine rock-formation near Nelson, but the companies which have worked the ore have not hitherto been successful—the last one, "The Champion," failing from want of sufficient capital. Deposits of chrome-ore are also found here. Silver-ore has been worked in the Collingwood District; and at Parapara, in Blind Bay, there are widespread deposits of hæmatite iron-ore, combined with limestone and coal, waiting only for capital to develop them. There is also a small industry in flax. It will be readily gathered from the above brief description that mining is the chief industry of the Nelson District. A great impetus has been given to the mining industry on the West Coast, in a manner similar to that which has taken place on the Auckland goldfields. In the Reefton district a large English syndicate has bought out several properties of quartz-mining companies, which have been paying concerns, although worked with limited capital and old-fashioned

machinery, with the view of introducing the newest methods of working and the most improved gold-saving appliances. A number of wealthy syndicates are now in the field, and a great revival has taken place in prospecting for new reefs, and in developing numbers of others known to be auriferous, the working of which has hitherto languished for the want of capital to develop them.

The timber industry on the West Coast has now become a very important trade. During the past year 4,614,110ft. of various kinds of wood, principally red and black pine, have been cut in this district alone for export, and silver-pine has been largely in demand for railway-sleepers for home consumption.

Towns.

The chief town is Nelson, situated at the head of Blind Bay, in 41° 16′ S., and surrounded on all sides, except the north, by mountains reaching an elevation of 3,500ft. With a mean temperature of 54° 8′ Fahr. it possesses a climate almost unequalled for its beneficial effects on invalids suffering from pulmonary diseases. There are many picturesque spots in the suburbs, and the town itself, with its cleanly-looking buildings and well-kept gardens, is one of the most charming spots in New Zealand. There is an old-established Boys' College, and a High School for Girls, besides Government and other schools. The Anglican Pro-Cathedral, built on the summit of a central hill, memorable as being the site of fortifications erected in the early days of the settlement for defence against an expected attack of the Natives, is a striking feature. The Roman Catholic Church, Convent, and school-buildings cover a large extent of ground. There is also at Stoke, a small village three miles from Nelson, a central Catholic Orphanage, surrounded by grounds of considerable area. There is a good supply of excellent water from a reservoir in the hills at the back of the town, and the streets are well lighted with gas. The several Government departments are housed in one roomy building, containing a large hall used for Supreme Court sittings and other public purposes. Nelson has a small natural harbour, formed by a boulder-bank running for eight miles parallel to the shore, deep enough at high tide to admit vessels of 1,000 tons burden. It is a port of call for the Union Steamship Company's coastal steamers, and has a small local fleet plying between the West Coast, Blind Bay, Picton, and Wellington. The town is reached from the eastward by a good main road from Marlborough. A railway-line has been constructed up country to the southward for thirty miles, passing through the farming villages of Stoke, Richmond (borough), Brightwater, Wakefield, Foxhill, and Belgrove. Leaving for the West Coast by a good main road, the traveller starts from the Belgrove Station on one of Cobb and Co.'s coaches, crosses Spooner's Range, the Clarke and Hope River saddles, and enters the Buller Valley at the junction of the Hope, about sixty-seven miles from town. He then enjoys a succession of views of mountain-gorge scenery, and, after traversing a gorge of seventeen miles in length, arrives at the Lyell, 107 miles from his starting-point. This is an alpine township, in a small quartz-mining neighbourhood. Here is a fine cast-iron girder bridge, spanning a rocky gorge of the Buller, and springing boldly from a bluff on the northern side. At 116 miles the junction of the Inangahua with the Buller is reached, the main road continuing to Reefton, with a branch road twenty-eight miles to Westport, which for twenty miles passes through some of the grandest river-gorge scenery in New Zealand.

Westport, the town next in importance to Nelson, is situated at the mouth of the Buller River. The harbour is sheltered from southerly gales by Cape Foulwind and its outlying rocks, and is accessible in nearly all weathers. A large sum has been spent on a system of harbour-works, designed by the late Sir John Coode. Westport is the place of shipment for the coal-mines lying northward as far as the Mokihinui River. The character of this coal for steam purposes stands almost unrivalled. The long line of coal-staiths on the northern bank of the river, with a fleet of steam-colliers loading alongside, does not fail at once to impress a visitor with a sense of the importance of the trade. Though much has already been done, yet the industry, from the extent of the coal-bearing strata, is capable of much larger expansion when the necessary capital can be found. The Westport–Ngakawau Railway to Mokihinui, connects with the mines and conveys the coal to the port.

At the foot of the Mount Rochfort plateau, nine miles from Westport, is Waimangaroa, and on the plateau itself is Denniston—both coal-mining villages. The latter, built at an elevation of 1,960ft., is said to be the highest township in New Zealand. On a clear day it is well worth a visit, for the sake of enjoying the magnificent panoramic view of the southern Alps, which reach their highest point in Mount Cook, 12,349ft. high, about 100 miles south. South of Westport are the alluvial gold-mining centres of Addison's Flat, Croninville, Nine-mile Beach, and Charleston.

From the Inangahua Junction, the main road continues southward through the Inangahua Valley, passing through cultivated lands, which are being gradually won from the heavy bush, and at a distance of 136 miles from Nelson reaches the township of Reefton. Here, as at Westport, are good hotels, and, as in every one of the larger coast towns, a hospital receiving a Government grant in aid. This town was the first in New Zealand to be lighted by electricity. Through the Midland Railway Company's extension of the Grey–Brunner Government line, Reefton is now connected by rail with Greymouth, from whence it is for the most part supplied. About two miles inland from Reefton is Black's Point mining township, with several batteries at work in and about the place, a visit to which is generally paid by tourists wishing to see something of the gold-mining industry. Other small mining townships are: Boatman's, Capleston, Antonio's, Noble's, Orwell Creek, Hatters', Nelson Creek, and Twelve-mile.

Leaving Reefton by rail, and passing into the Grey Valley through a short tunnel, and by a bridge over the Grey River, Totara Flat is reached, nineteen miles distant. Here there is a considerable area under cultivation. Seven miles farther on is the decayed mining township of Ahaura. Small townships are springing up along the railway-line, and several large sawmills are working.

At the Grey River Gorge, eight miles from Greymouth, we enter the Borough of Brunner. This place is the oldest centre of coal-mining in the district. Owing to the effect of the coal-smoke from the coke-ovens on the surrounding cliffs and bush, and the appearance of the numerous miners' cottages nestling on the mountain-slopes, it has the look of a veritable "Black Country," such as may be seen in some coal-districts in England.

Several large sawmills are at work between this place and Greymouth, which we reach at a distance of 180 miles from Nelson, the centre of the Grey River from its junction with the Arnold being the southern boundary of the district at this part. The Midland Railway line, to connect with Canterbury by way of Arthur's Pass in the Otira Gorge, has been constructed on the Westland side of the Arnold River to Lake Brunner, the eastern shores of which it skirts for some distance, and from thence to the Teremakau River.

The town of Greymouth is situated on the south bank of the Grey River, in the Westland District, and is the shipping-port for the products of the coal-basin included within the area of the Grey Coalfields Reserve, the larger portion of which lies on the north bank of the river in the Nelson District.

The small town of Cobden is situated opposite the town of Greymouth, and is connected with it by a substantial bridge.

Roads, Tracks, &c.

Situate on the coast, fifty miles north of Westport, is the Karamea Special Settlement, principally settled from the Nelson and Motueka Valley districts. This part of the district contains some excellent but heavily-timbered land, and is reached from Westport by a good road, connecting with the Westport–Ngakawau Railway at the Mokihinui River. A bridle-track, also, connecting with Collingwood and Golden Bay, is nearly completed by the Government. This track passes along the coast northwards, thence up the Heaphy Valley to the Golden Downs, and down the Aorere Valley to Golden Bay. Here again is another coal-basin, which, though of inferior value to the older deposits on the western side, is likely to become of importance, having at the present time one mine in full work. Another coal-basin exists at West Wanganui and Pakawau.

In the Aorere Valley, of which Collingwood is the port, alluvial mining is still found to be payable, and the country contains some valuable timber in the upper part not yet utilised. Nineteen miles south, in Blind Bay, lies the small port of Waitapu, from which a considerable amount of sawn timber is exported, drawn from the Takaka Valley, and brought down by a steam tramway from the upper mills. From the head of this valley the main road is carried over a pass in the Pikikirunga Range, 3,476ft. high, through the villages of East and West Takaka, Riwaka, Motueka, and Moutere to the town of Richmond, eight miles from Nelson. Inland are also the villages of Ngatimoti, Dovedale, Tadmor, and Sherry, each the centre of a number of small farms, and all connected by fairly-good dray-roads.

An inland road, partly bridle-track and partly dray-road, has been made from Nelson to Canterbury, by way of Tophouse, Wairau Gorge, Tarndale, Clarence Valley, Jollie's Pass, and the Waiau Plains. On the Hanmer, a tributary of the Waiau-ua, is a Government Sanatorium, at an elevation of 1,000ft. above sea-level, and among hills 6,000ft. high. Here there are hot mineral springs, much visited by persons suffering from rheumatism and skin-diseases. It is reached by coach and rail from Christchurch in ten hours. The main-trunk railway-line is constructed to Culverden, twelve miles north of the Hurunui, the southern boundary of the district. From Culverden a good coach-road passes through Rotherham and Waiau-ua to the East Coast at Kaikoura, connecting with Blenheim and Nelson.

Crown Lands.

About 3,000,000 acres of Crown lands still remain unoccupied in the northern part of this district; they consist principally of high bush-country, with occasional patches of good valley-lands, the greater part being classed as second-class land. Of these, the area open for selection to date comprises 37,348 acres of surveyed lands, and 252,697 acres unsurveyed lands, of which the location, nature of soil, &c., have been briefly described in the foregoing pages.

THE WESTLAND LAND DISTRICT.

By DAVID BARRON, Chief Surveyor.

The Westland Land District is situated about midway on the western watershed of the South Island, being bounded on the north by the Grey and Arnold Rivers, and on the south by a line from Mount Aspiring to the mouth of the Awarua River. The length is 200 miles, with an average width of about twenty-four miles. The total area equals 4,759 square miles, the bulk of which is occupied by the main range and its off-shoots, leaving a narrow strip of low-lying terraces, plateaux, and river-flats between the foot-hills and the sea-coast.

Physical Features.—Mountains.

The eastern boundary, which extends from Harper's Pass (Hurunui Saddle) to Mount Aspiring, a distance of 230 miles, is a line of snow-clad summits, ranging in height from 5,000ft. upwards. Mount Cook dominates the whole from an altitude of 12,349ft. In 1881 the Trig. Survey finally determined that this famous peak could no longer be claimed as a portion of Westland, but was altogether east of the main divide. At the same time, it still stands out as the finest work of nature visible in Westland, and, on account of its nearness to the sea, forms the most conspicuous landmark along the west coast of the Island.

The great range presents a splendid panorama of ice-clad peaks and gleaming snow-fields towering over the forest-clothed tops of the lower hills, the heads of the valleys being filled with glaciers, whose terminal faces are glittering masses of almost unsullied ice. The Fox and Franz Josef come down to within sixteen miles of the coast, and 700ft. above the sea level, and can be approached on horseback without difficulty.

Rivers.

With few and minor exceptions, these are all alpine in character, confined to narrow channels in the ranges; but, on emerging from the hills, spreading often for a mile, carrying enormous quantities of water and shingle, and, when in flood, doing much damage to the sea-board country. Except in wet weather, the smaller rivers are easily crossed at any time of the year, but from the beginning of September to the end of January the larger rivers are rarely fordable, owing to the melting of the inland snows, and the traveller has to use the ferries, which are established at all the main crossings.

Forests.

With the exception of the *pakihis*, or natural clearings, and open river-beds, the whole of Westland is covered with dense forest from the sea coast to the winter snow-line on the mountains. Rata and kamahi are the principal varieties used for firewood, and are practically inexhaustible. Furniture timbers, such as kawhaka (cedar), broad leaf, mottled silver-pine, and mountain totara, are to be found from the 3,000ft. level on the ranges downward, and must eventually form a source of great wealth. The lower country contains large areas of valuable saw-milling timbers, chiefly red- and white-pine. Black- and white-birch, silver- and black-pine also occur in isolated patches of considerable extent. A limited quantity of totara is to be obtained in three or four districts. The total area of forest amounts to 2,394,951 acres, of which 903,785 acres are at an altitude of over 2,000ft. above sea-level, and mostly covered with stunted timber and alpine scrub. It is estimated that 940,500 acres only can fairly be classed as milling timber-land.

Lakes.

These are fairly numerous, accessible for the most part by roads, and scattered throughout the district. They vary much in character, comprising the tidal waters of Saltwater and Okarito Lagoons, the bush-girdled Mahinapua, Ianthe, Wahapo, Moeraki, and Ellery; the shallow, reedy Tauwherikiti and Rotokino; the expanse of Lake Brunner, and the lovely mountain-girt Kanieri. Most of them teem with water-fowl of every description. While no two are really alike, each having its special scenic beauty, yet nearly all reflect the tints and snows of the great mountains.

Soils.

On the mountain uplands, from the grass-line down to the heavy timber, the soil is dry and strong; cocksfoot grows well on it, and no doubt in the future much of this country will be cleared, thus affording safe wintering ground for sheep. From the 2,000ft. level downwards the soil becomes thinner and stonier, many of the finer particles finding their way to the bottom of the foot-hills, and forming an area of really good land, in some places narrow, at others spreading out into gently sloping fans of considerable size, covered with light timber, scrub, or fern. The fertility of these lands is mainly due to the loose nature of the subsoils, which allows heavy rains to drain away, and thus prevents the sourness so characteristic of the heavily-timbered terraces of the coastal country. Near the coast the soil is very thin, and lies for the most part on an almost impervious clay of poor quality, which, in its turn, is often found to rest on impacted non-porous gravels. Hence, during the winter months the ground is very wet and sloppy.

After sawmillers have cleared away the timber, doubtless much of this country will become fair grazing land, when thoroughly drained and dressed with lime, of which immense quantities lie to hand in several neighbourhoods. Dotted over the terrace country are many *pakihis*, or natural clearings, of different areas and various formations. Several are fairly dry, others are very sour and wet, others again being open swamps. The soil is often more or less peaty, thoroughly water-soaked, and resting on a thin skin of tough, barren clay or cemented gravel, below which is loose drift. As settlement progresses attempts will undoubtedly be made to reclaim these waste spots by systematic drainage, and most of the swamps will then be converted into good farms. Generally there is excellent fall for drains, the substrata are porous gravels, and even now the boggy places may be crossed on foot.

On the banks of the rivers there is a fringe of light, sandy loam, very excellent for pasture and root crops, easily cleared, and very level. Apart from occasional damage by floods, this land has amply paid for clearing.

Climate.

The climate may be described as fairly mild and of equable temperature; this is due to its humidity, the average rainfall being 119in. per annum. The prevailing winds are from the north and south-west, and a notable feature is the absence of strong or gusty wind during fine weather. Snow rarely falls below 2,500ft, and the frosts are never prolonged or severe.

Pastoral Lands.

The pastoral lands comprise 2,002,577 acres, of which 1,898,776 acres are covered with forest, and 103,801 acres are, for the most part, tussock country on the ranges above the timber line. Large herds of cattle are bred and mustered in these bush lands, where they feed on the under-scrub; thence they are either driven by road or brought by steamer to the Hokitika and Greymouth saleyards.

Of late much attention has been paid to sheep-breeding, and flocks of considerable size are now kept in paddocks on the open river-flats, and also on the mountain pastures. As yet, however, the efforts to feed off the higher grass lands have not been very successful, owing to farmers neglecting to remove their sheep before the early winter snow falls. Until the settlers clear and grass the upper bush down to the 2,000ft. level, the flocks must be driven down in the autumn and wintered in the low country.

Although for several years the rabbits have crossed from the eastern slope into Westland, they have not made their way down to the sea-board, but are confined to the head-waters of a few of the southern rivers. Even when let out in numbers many years ago, as in the Kokatahi and Mahinapua districts, they have barely held their own, and have certainly not spread to other neighbourhoods.

Agricultural Lands.

The agricultural lands still open for selection amount to 331,379 acres, and are made up of 314,048 acres of bush and 17,331 acres of clear country, the latter comprising the *pakihis* and swamps noted above, and also strips of tussock lands in the river valleys. Oats are the only grain grown in Westland. They are made into hay and chaff, and used for the most part by the farmers for their own stock, very little finding its way into the markets, which are still supplied, as heretofore, by Nelson and Canterbury. The district is well fitted for, and produces freely, both turnips and potatoes; still considerable quantities of the latter are imported into Hokitika and Greymouth. Of late, especial attention has been directed to the butter industry, and it is proposed to establish two factories in the Kokatahi settlement. Fruit-growing has also made headway, and very few apples are now imported, the local growers being able to supply the ordinary demand.

Means of Communication.

The district is fairly well provided with means of communication. The railway now extends from Hokitika, *viâ* Greymouth, to Reefton, branching at Stillwater to Jackson in the Upper Teremakau. Coaches twice a week connect with Canterbury, *viâ* Arthur's Pass, and ply daily between Hokitika, Ross, Greymouth, Kumara, and the neighbouring towns; while once a week a mail is conveyed on horseback southward to Gillespie's Track, and once a fortnight to Jackson's Bay. A subsidised steamer runs between Hokitika and the numerous southern ports as far as Jackson's Bay, plying every two months, thus enabling settlers to obtain supplies and to ship their cattle and produce to market. The Government steamer also calls at Jackson's, Big, and Bruce Bays on her quarterly trips from Dunedin. Steamers also trade regularly between Hokitika, Greymouth, and other parts of the colony. The Main South Road, which for many miles skirts the foot of the Main Range, has been so greatly improved of late years, that the traveller can now ride comfortably and safely

viâ Haast's Pass right through into Otago. Numerous bridle-tracks branch from the trunk line to various points, while the large open river-beds likewise give access to the country on either hand. From Jackson's Bay horse-tracks have been made *viâ* Cascade River and Barn Bay to open up the southernmost country. Numerous cones, ranging in height from 1,850ft. to over 7,000ft., leading across the Central Range, have been explored and mapped, but of these the only sub-alpine saddle is Haast's Pass, all the others being liable to blocks by winter snows. A coach road over Arthur's Pass in the north and a horse-track through Haast's Pass in the south have been made; but between these points, a distance of 163 miles, no transinsular road exists. Still in the future, as the population increases, doubtless tourist- and stock-tracks will be constructed along many of the intervening routes.

Harbours and Ports.

The harbours and ports of Westland are the following :—

Greymouth, twenty-four miles north-east of Hokitika: Extensive harbour-works have been carried out. A breakwater or sea-wall extends some 3,360ft. seaward from the mouth of the river on the south side, and on the north side 1,100ft., with internal half-tide training-walls, the result being an average depth of water on the bar of 20·7ft. at high water and of from 8ft. to 16ft. at low water. Vessels of 1,000 tons can now come alongside the wharf. There is berthage accommodation of 1,824ft., with a minimum depth of 12ft. to 16ft. at low water. The principal exports are gold, coal, coke, and timber. The number of vessels that entered the port during the year 1895 was: 538 steamers, tonnage 135,082; 53 sailing-vessels, tonnage 6,890; being a total tonnage of 141,972 for the year. The train runs down the wharf, and the coal-trucks, specially made for the purpose, are lifted and emptied into the vessel's hold by means of powerful cranes, of which there are six, with capacities of from 1½ tons to 12 tons, so that every encouragement is given to quick despatch.

Hokitika: Two training-walls have been constructed, the one on the north side being about 2,000ft. long, while that on the south is 670ft. The bar is one of shifting sand, and the depth at high water varies from 9ft. to 15ft., while inside the depth is from 6ft. to 22ft. for three-quarters of a mile up from the entrance. For ten months out of the twelve the port is usually safe for vessels drawing 8ft. to 10ft. of water. The berthage space amounts to 1,000ft., with from 18ft. to 22ft. of water. The principal exports are gold and timber. The number of vessels that entered the port during 1895 was 83: tonnage, 5,606.

Okarito, fifty-five miles south-west of Hokitika: A bar harbour, sometimes completely blocked by a high sand-bank thrown up by heavy seas. When open, the entrance is good, with a maximum depth of 10ft. There is a small jetty about half a mile from the entrance.

Bruce Bay, ninety-five miles south-west of Hokitika: An open roadstead, well sheltered from the south and south-westerly winds by Heretaniwha Point, which juts out fully a mile to the northward. Good anchorage in 18ft. of water opposite the Green Rock, which stands up out of the water. Good boat-landing with above winds on a smooth sandy beach.

Paringa River, 104 miles south-west of Hokitika: Open roadstead. Vessels coming in and out should give Hauata Reef (off the north head) a wide berth. There is also a sunken reef, awash at low water, in the middle of the bay, and a dangerous sunken rock just off the south head, two or three chains away, facing a small sandy bay, and right abreast of the trig. station. Vessels lie inside and a little to the northward of this rock, about a quarter of a mile from shore, and are quite safe with southerly winds.

Haast River, 118 miles south-west of Hokitika: A constantly-shifting bar at entrance, which is nearly opposite and a little to the southward of the Alhambra Rock. This rock stands well out of the water, and vessels entering can go on either side with safety. Average depth of water on bar from 6ft. to 8ft.

Okuru and Turnbull Rivers, 138 miles south-west of Hokitika: These rivers join just inside the entrance. Good, straight channel; average depth, 8ft. to 10ft. The port is well sheltered by Open Bay Islands, which lie about three miles away, just opposite the entrance, bearing a trifle west of north. A dangerous reef lies about

two miles and a half from the south-west point of the smaller island, and immediately to the north-west of a line drawn from the last-named point to the extreme end of Jackson's Head.

Jackson's Bay, 153 miles south-west of Hokitika: Good shelter and anchorage, open only to north-east, with 12ft. of water within a few chains of shore. Jackson's Head runs out about one mile and a half in a north-easterly direction from the southern end of the bay. This is the only ocean harbour on the coast of Westland, and could be converted into a first-class port at comparatively small cost. No doubt Jackson's Bay will eventually form a great coal port, as indications of coal are found from the bay to Tauperikaka, a distance of thirty miles. Moreover, the recent discovery of a practicable pass through the Main Range, *viâ* the Waiatoto and Axius Rivers, will make it in the near future the natural outlet for the Lake Wanaka country.

Big, or Awarua Bay, 200 miles south-west of Hokitika: At the extreme south-west corner of Westland. An open roadstead, sheltered from east and south-west winds; 24ft. of water on south side anchorage and 30ft. on north side, just opposite Crayfish Rock, in a spot sheltered from northerly winds.

Steamers have also, in past years, entered the Teremakau, Waitaha, Wataroa, Wanganui, Waiatoto, and Arawata Rivers, all of which have bar-entrances. The Cascade River is likewise navigable, though no steamer has as yet been in; and goods and passengers are also landed at the roadsteads of Saltwater, Gillespie's Beach, and Abbey Rocks.

Towns.

Brunner: A borough of 1,632 inhabitants; is a coal-mining centre. Coke and fire-clay bricks are also manufactured. Railway communication with Greymouth Port, Reefton, and Upper Teremakau.

Greymouth Borough: Population, 3,099; the shipping port for Grey Valley. Railway communication with Reefton, Upper Teremakau, and Hokitika. Railway workshops, foundry, and quarries. The principal business portion of town is built on Native land, rents being paid to the Public Trustee, who distributes them to Natives entitled thereto.

Kumara: Borough, of 1,149 inhabitants. This is a brisk mining town, and is probably the largest hydraulic-sluicing mining centre in New Zealand. It has two suburbs—Dillmanstown and Larrikin's—with populations of 467 and 162 respectively.

Hokitika: Borough, of 2,059 inhabitants. This is a pretty town, the political capital of Westland, the port for shipping and centre of supply for a number of little townships, and for the whole district south of Teremakau.

Ross: Borough, population, 727. A clean and neat little town, the centre of a considerable mining district, with a few good sluicing claims on a large scale.

In addition to the above, there are several small mining centres, such as Stafford, Kanieri, Woodstock, Rimu, Blue Spur, Okarito, and Gillespie's.

Mining and Minerals.

The District of Westland contains the greatest area of alluvial auriferous ground on the West Coast. In the Mines Report of 1895 the number of miners employed is given as 2,448, and the amount of gold produced as 51,317oz., valued at £205,278.

All the Westland rivers carry more or less gold, but the two great golden rivers are the Arahura and Waiho, the bars and ripples in which appear to be replenished with fresh deposits of gold after each flood. Standing on the summit of Mount Turiwhate, the ancient beds of the Arahura can be easily traced northward to the Kumara and southward to the Rimu diggings. Similarly the Waiho has, in olden times, flowed both northward down the course of the Okarito River and southward to the Omoeroa River, the lateral terraces in both directions being well defined and gold-bearing.

There are three main gold-bearing deposits in Westland: the first, which may be called riverine leads, run generally westward. These are ancient river-beds, often lying at considerable elevations, of which the bulk has been washed away, leaving detached portions, as at Kumara and Rimu; the second are beach leads, both those

along the present coast-line, and others running parallel thereto at distances varying from one-quarter to four miles inland, and at levels from a few feet below to a couple of hundred feet above sea-level; the third are extensive masses of gravel, &c., occurring in large isolated patches, as at Big Dam Hill, Humphrey's Gully, and Bald Hill, north of the Haast. These drifts have all one notable peculiarity, viz., that they invariably coat the seaward faces of the hills, and neither gold nor drift is to be found on the inland slopes. Gold-bearing fans from Mount Greenland have been found at different levels on Ross Flat, having probably been deposited in deep water by sucessive land-slides.

Hydraulic sluicing on a large scale is successfully carried on in various portions of the northern district, and will doubtless be extended to many other localities. The tapping of the Arahura River, by the Humphrey's Gully Sluicing Company, will, when completed, enable the miners at Blue Spur to obtain an unfailing supply of water, and command a large area of auriferous country, at present unworkable from want of water at a sufficient altitude. Numerous and costly experiments have been made with dredges of different types in the endeavour to work economically the gold-bearing sands which lie along the sea-beaches for a distance of over 140 miles; but none have proved a success as yet. A considerable number of miners (black-sanders) work on some of these beaches, and seem to make a fair living, many of them having been so employed in one neighbourhood for over twenty years.

Gold-bearing quartz has been found throughout the district, the most promising finds being at Taipo Range, Browning's Pass, and Cedar Creek; but as yet this quartz has nowhere been properly worked. Silver-ores have been found,-notably at Mount Rangitoto; but the main lode has not yet been discovered, although a very thorough search has been made for it. Copper has also been found in many places, more especially at Browning's Pass and on the western slopes of the Matakitaki Ranges, where good coal and limestone are also to hand.

THE CANTERBURY LAND DISTRICT.

By J. W. A. MARCHANT, Chief Surveyor.

Boundaries—Physical Features.

The Land District of Canterbury comprises the central portion of the South Island, and is bounded towards the north by the Hurunui River, with an extension northward to the Waiau-ua River for about twelve miles from the sea; towards the westward by the summit of the Southern Alps to Mount Aspiring; thence towards the south by a right line and by the Ohau and Waitaki Rivers to the sea; and towards the east by the South Pacific Ocean. It lies between south latitudes 42° 45′ and 44° 55′, and east longitudes 168° 50′ and 173° 20′. The length of the district north-east and south-west is about 190 miles; the breadth W.N.W. and E.S.E., from the summit of the Alps to the sea, averages seventy miles. The sea-board has a length of about 240 miles, consisting generally of low-lying beaches, broken by the projection eastward of Banks Peninsula, which contains the only large natural harbours. That portion of the district which fronts the ocean between the Ashley and Opihi Rivers is flat land, about 2,500,000 acres in extent; north and south of those limits the plain is interspersed with undulating and hilly country.

This great plain stretches westwards, rising and merging into downs and hills, which again extend westward and merge into the Southern Alps and the offshoots therefrom. Banks Peninsula, which has an area of about 250,000 acres, is wholly composed of ridges and hills, deeply intersected by basins and gullies, the result of volcanic action.

The Southern Alps, which form the backbone of the island, are a continuous chain of mountains, with a succession of magnificent peaks, attaining their culminating point in Mount Cook, or Aorangi, 12,349ft. above sea-level; there are, besides,

numerous peaks ranging in altitude between 7,000ft. and 10,000ft. Offshoots, extending to great distances eastward and south-eastward from the main range, attain elevations of 6,000ft. to 9,000ft. On these mountain-ranges are numerous and extensive glaciers, from which emanates the river-system of the district, comprising the Hurunui, about 85 miles in length; Waimakariri, 90 miles; Rakaia, 85 miles; Ashburton, 64 miles; Rangitata, 74 miles; the Waitaki and its main feeders, 140 miles. These rivers rush down from the mountain-gorges, through the intervening ranges and hills, and traverse the plains to the sea. The channels on the plains are shallow, and extend in some instances over a mile in width.

These rivers serve as outlets for a portion of the Lake system of the South Island, Lake Sumner being connected with the Hurunui, Lakes Coleridge and Heron with the Rakaia, and the Mackenzie Country lakes—Tekapo, Pukaki, and Ohau—with the Waitaki. Another important lake is that known as Lake Ellesmere, west of Banks Peninsula; it is separated from the ocean by a narrow shingle-spit only 5 chains across at one point, through which, at certain seasons, the flood waters force a channel to the sea.

Climate.

The climate of Canterbury is well suited to Europeans. It resembles that of Great Britain, but on the plains is far more equable, the mean daily range of temperature being 17·10° Fahr. Observations taken at Lincoln (fourteen miles from Christchurch) for a period of ten years, ending December, 1892, give the following results: Barometer, reduced to 32° Fahr. and sea-level, 30·06in.; mean maximum daily temperature, 61·47°; mean minimum daily temperature, 43·27°; mean average temperature, 52·37°. The extremes of temperature were 92° and 22° Fahr. The rainfall for the same period averaged 26·809in. per annum, the extremes being 35·287in. in 1886 and 14·836in. in 1890. The average annual number of days on which rain fell was 123, the extremes being 149 in 1887 and 98 in 1891. Snowfalls are very light on the plains, but in the high uplands the climate is much colder and more severe. The changes of weather and temperature are sudden, calms and gales, rain and sunshine, heat and cold alternating. The prevailing winds are north-east, south-west, and north-west—the last a hot wind. The climate, as a whole, is splendidly healthy, bracing, and most enjoyable.

Foundation and Settlement.

The district was occupied, in the first instance, by settlers sent out by the Canterbury Association, which was formed in 1848, and incorporated by Royal Charter in 1849, under the auspices of prominent men in England, including the Archbishop of Canterbury and Lord Lyttelton. The step was not taken until after due inquiry as to the most suitable part in which to establish a settlement. Captain (now Sir George) Grey, at that time Governor, recommended the Wairarapa, but it was finally decided to take over from the New Zealand Company a tract of the Canterbury Plains, in the neighbourhood of Port Cooper. Captain Thomas, the agent of the association, who had advised the selection, superintended the surveys and the preparations for receiving intending settlers. The original intention of the founders was that the settlement should be independent and complete in itself, and should embrace only such persons as were members of the Church of England and were approved of by the association. This was frustrated by the influx of numbers of persons of all classes and beliefs. The first body of emigrants arrived at Port Cooper on the 16th December, 1850, and the settlement remained under the control of the association, as directed by a committee of management in England, and under the active personal supervision of Mr. John Robert Godley, until 1853, when the whole of Canterbury became a province of New Zealand by the provisions of "The Constitution Act, 1852."

Thenceforward the control of the settlement was vested in the Superintendent and the Provincial Council. The first Superintendent was Mr. James Edward FitzGerald, who held office till 1857; he was followed in succession by Mr. William Sefton Moorhouse, 1857-1863; Mr. Samuel Bealey, 1863-1866; Mr. Moorhouse again till 1868; and Mr. William Rolleston till the abolition of the provinces in 1876, when the district came directly under the control of the General Government.

Area, Nature, and Disposition of Lands.

The area of the Canterbury Land District is 8,776,655 acres, of which the estimated area of forest-land is 492,130 acres. Forest-lands are found in Banks Peninsula and in the Mount Peel and Waimate districts, where the timber consists chiefly of rimu, totara and matai; at the sources of the Ashley, Waimakariri, Rakaia, Hopkins, and Hunter Rivers, at Lake Wanaka and near Springfield and Methven, the timber in these localities being mostly native beech; and near Oxford, where the beech is interspersed with rimu, totara, matai, &c.

The lands of Canterbury are classed as follows: First class, 1,840,681 acres; second class, 4,707,173 acres; third class (barren lands and lands of small value), 2,228,801 acres: total, 8,776,655 acres.

The disposition of lands was in 1896 as under:—	No. of Holders.	Area in Acres.
1. Crown lands disposed of for cash, and under Midland Railway Act	...	3,390,146
2. Lands held on deferred payments	68	17,795
3. Lands held on perpetual lease	204	21,403
4. Lands held as leaseholds in perpetuity	460	116,015
5. Lands held in occupation with right of purchase ...	16	1,036
6. Lands held as village-homestead special settlements ...	357	11,420
7. Lands held as small grazing-runs	41	90,077
8. Lands held as grazing-farms	29	44,878
9. Pastoral licenses, including small area of barren country...	97	2,992,610
10. Special-settlement associations	42	5,316
11. Land granted under Midland Railway Act (area also included in 1) 279,420 acres		
12. Reserves held under license	315	62,565
13. Area of land reserved and granted under various Acts (exclusive of 11)	...	476,190
14. Land purchased and disposed of under Land for Settlements Act (included in Nos. 4, 7, 10, and 12) 6,497 acres	139	...
15. Crown lands open for selection	...	17,619
16. Crown lands being prepared for selection*	...	638
17. Barren lands and lands for future disposal	...	1,528,947
Total		8,776,655

In explanation, it may be noted that No. 1 comprises the freehold lands conveyed, and that tenants of Nos. 2, 3, and 5 have the right of acquiring the freehold, which is not the case with tenants of Nos. 4, 6, 7, 8, 9, 10, 12, and 13. Crown lands proper are: 15, open for selection; 16, being prepared for selection.

Internal Communication.

In no part of New Zealand are the means of communication better than in Canterbury. The natural facilities of the country have been abundantly supplemented by railways and roads. Lyttelton, the chief port, is connected by rail with Christchurch, the heart and centre of the whole district. From Christchurch the main line extends northwards to Culverden, striking the Hurunui River at a distance of 57 miles; southward the main trunk line runs to Waitaki, 138¾ miles. These lines tap and serve the whole coastal district, and the lands adjoining on the western side. As feeders to these trunk lines, eight branch lines have been constructed westward, and two lines south-eastward; the former, in most instances, extending to the foot of the hills.

Combined with the railway system is a complete network of main, district, and subsidiary roads, extending into all parts of Canterbury. The total length of railways is 455 miles, and the roads probably exceed 10,000 miles in the aggregate. The completion of this splendid system is due, partly to the foresight of the original settlers, partly to the exertions of the Provincial Government, and partly to the railway and public-works policy of Sir Julius Vogel.

* Exclusive of 40,000 acres of resumed runs, and 9,419 acres of land for settlements.

Geological Formation.

According to Sir James Hector, the main western ranges are composed of Upper Palæozoic rocks, having at their base extensive plains of Tertiary fluviatile formation, with occasional protruding ridges of Upper Mesozoic, forming low mountain-ranges subordinate to the main axis. Banks Peninsula consists of basic volcanic rocks.

Soils.

The Southern Alps and mountains adjoining are, owing to their great altitude, subject to disintegration, and form for the most part rocky barren wastes.

The lower ranges and hills, the high tablelands, and the light stony portions of the plain form the pastoral areas.

In the northern and southern districts and in the great central plain are the agricultural areas. This latter class of land comprises rich alluvial tracts about Cheviot, Rangiora, Kaiapoi, Lincoln, Ellesmere, Longbeach, Temuka, and Waimate, and the splendid plain- and down-lands which extend from Cheviot to the Waitaki.

Banks Peninsula, where the soil is of a rich volcanic nature, though exceedingly hilly, has alluvial areas in the valleys and about the bays.

Pasturage and Crops.

Below a certain level, the mountainous and hilly regions, and the high upland country in the western and northern part, are covered by native grasses, with an admixture of English forage-plants where the character of the soil and other circumstances are favourable.

The pasturage, which is very suitable for sheep-farming, is taken full advantage of by the pastoral tenants of the Crown, and is used to some extent by freeholders. The light stony portions of the plain also contain native grass lands, well adapted to merino sheep.

The lower hills, downs, and better kinds of plain-country have been widely cultivated, and have proved well fitted for the production both of cereals and of grasses.

The chief crops grown are wheat, oats, barley, turnips, rape, clover- and grass-seed; while amongst other crops produced are maize, rye, peas, and beans.

Of the cereals, wheat is the most largely grown, and was for many years a large item of export. In 1896 the area under crop was 169,495 acres; the yield 4,576,365 bushels, or 27·00 bushels per acre, equal to two-thirds of the whole yield for the colony.

Oats also are very successfully grown, the figures for the same period being 128,055 acres, yielding 3,841,650 bushels; average 30·00 bushels per acre, or nearly one-third of total yield for the colony.

Barley of superior quality is also produced, the figures being 12,198 acres, 341,544 bushels: average per acre, 28·00 bushels, or over one-third of total yield. Grass-seeds are abundantly grown, cocksfoot mainly on the splendid Banks Peninsula country, and rye throughout the land district. The yield in 1896 was: cocksfoot, 355,693 bushels of 12lb.; and ryegrass, 255,056 bushels of 20lb.: the proportion to the total yield for the colony being respectively about three-fifths and two-sevenths.

Hay was grown on 27,662 acres.

Root-crops.

Potatoes, which yield crops of excellent quality, were grown in 1896 on 8,368 acres, the yield being 68,785 tons, or 8·22 tons per acre—nearly one-third of the yield for the colony. Turnips and rape were grown on 169,796 acres, being about one-third of the total acreage for the colony. The combined area of other crops grown, including rye, peas, beans, mangolds, beet, carrots, and onions, was 17,644 acres. The area of oats for green fodder and hay was 48,925 acres. The area ploughed and laid down in English grasses was 1,478,491 acres. Surface-sown lands comprised 353,607 acres. The total area under crop was 554,497 acres, and the area broken up but not in crop, 10,725 acres.

Stock.

The pastoral and agricultural lands provide grazing and fodder for a large number of sheep, cattle, horses, and other stock. Of late years the value of the plains has been much enhanced and the carrying-capacity thereof greatly increased by the water-race system, which supplies water throughout the length and breadth of the dry areas, and enables the country to be occupied in smaller holdings than would otherwise be possible.

The following table shows the extent, cost, and other particulars regarding the water-race system in the several counties in 1894:—

County.	Area watered.	Miles of Races.	Total Cost.	Cost per Acre watered.	Amount of Water distributed every Twenty-four Hours.	Annual Charge for Use of Water.
	Acres.		£	s. d.	Gal.	
Selwyn ...	326,388	1,084	67,679	4 1¾	70,940,960	8s. 4d. to £1 3s. per 100 acres.
Ashburton	586,000	1,050	27,000	0 11	75,000,000	About £3 per mile of race.
Geraldine	71,212	260	9,010	2 6½	29,520,000	About 7d. per acre, including a rate for payment of principal and interest on loans, and a rate for maintenance.
Waimate	28,000	105	4,100	2 11	7,200,000	Races are maintained by a small rate on the annual value of lands watered.

The sheep in the Provincial District of Canterbury in April, 1895, numbered 4,716,558. In January, 1896, there were 44,439 horses, 90,067 cattle, 92 mules and asses, and 64,171 pigs.

The district has a well-deserved reputation for the classes and splendid quality of its sheep. On the mountains and higher lands the merino still predominates; but on the richer low-lying ranges, hills, and plains the prevailing types are crosses between the merino and Leicester, Lincoln, Romney Marsh, and other breeds. In proof of the superior character of the flocks, pasturage, and climatic conditions in the South Island, the following percentages of lambing returns are quoted—these are "fair average returns, but much higher might have been exhibited": Mountain native pasture—pure merino, 75·36; pure merino and Border Leicester, 88·94: English-grass pasture—crossbred and Border Leicester, 80·8; half-bred Border Leicester, 82·79; Border Leicester, 90·77; Lincoln, 88·08; Romney Marsh, 111·46; English Leicester, 93·34; Shropshire, 97·41; Southdowns, 96·87. It must be borne in mind that the flocks and herds are supported by the natural and artificial pastures without housing.

Owing to the development of the frozen-meat trade a great impetus has been given to sheep-breeding. The bulk of the primest meat exported from the colony is supplied by this district, with Marlborough, and commands the highest price in the London markets. In the year 1895 the number of carcases frozen was 654,598, of the value of £384,489, being over one-third of the total output of the colony in this line. 749,025lb. of preserved meat, valued at £14,700 were also produced. Other productions during 1895 were as under: Tallow, 3,236 tons, value £53,552; bonedust, 1,038 tons, value £3,733; neatsfoot- and trotter-oil, 6,341 gallons, value £917.

The total quantity of frozen meat exported from Canterbury during the year ended 31st March, 1896, was 465,118 cwt., valued at £532,460. At Belfast, Islington, and Timaru freezing-works are established, each containing a complete plant for carrying on the industry, as well as departments for curing, preserving, boiling-down, tallow-

rendering, fellmongering, and the manufacture of manures. The Belfast company have at their command steam-power equal to 500 horse-power, and employ about 220 men. They have storage for 26,000 sheep, and can put through 3,000 a day. The Islington and Timaru works, which are owned by the Christchurch Meat Company, employ from 250 to 300 men. The former can put through 2,000 sheep and 1,000 pigs per diem, and have storage for 36,000 carcases. The latter can deal with 1,000 sheep in a day.

Wool.

During the year ended 31st March, 1896, there were shipped at Lyttelton and Timaru 32,221,885lb. wool, valued at £1,089,430; and to this must be added the amount (about 1,000,000lb.), bought for manufacture by the woollen-mills in the district. The staple of the New Zealand wool, especially the long-wool and cross-bred, is remarkable for its freedom from breaks and other imperfections. The average clips are approximately as follows: Merino, 4lb. to 7lb.; quarter-breds, 6½lb.; half-breds, 7½lb.; three-quarters, 8½lb.; Leicesters, 10½lb.; Lincoln, 11lb. From special flocks clips up to 25lb. and 30lb. are obtained.

Butter and Cheese.

Banks Peninsula and the rich tracts of country previously mentioned are excellently suited for dairy farming. The pasturage and climatic conditions are favourable, and a great increase in the production of butter and cheese may be looked for, more especially as housing and hand-feeding are in some districts unnecessary. A central co-operative dairy factory has been established at Addington, served by twelve creameries, situate at Marshlands, Oxford, Halswell, Springston, Doyleston, Little River, Ladbrooks, Lakeside, Kaiapoi, Green Park, Brookside, and Ashburton, each capable of dealing with the milk of 1,000 cows. There are also very complete dairy factories at Taitapu, Sefton, Temuka, Southbrook, Belfast, Tinwald, and Le Bon's Bay, as well as a cheese factory at Flemington.

In 1896 the production of butter at the Canterbury factories alone amounted to 1,213,942lb., and of cheese to 582,400lb.

Timber.

The sawmilling industry finds its development chiefly in the Oxford, Little River, Mount Somers, and Waimate districts. The number of mills in Canterbury in 1895 was twenty-two, employing 232 hands, the horse-power being 318. The output was 3,697,230ft., valued at £17,608. The timber comprises birch, totara, red- and white-pine. The first-named is used chiefly for sleepers and fencing, the totara and pine for building purposes. Including the work done by the planing- and moulding-mills the value of all the manufactures under this head was £26,154.

Fruit.

The district is eminently adapted for the growth of a large variety of fruits, especially all that flourish in Great Britain. Attention has recently been directed to landing supplies of fruit in London; the attempts so far have proved satisfactory, and point to the possibility of a large trade being established.

Coal.

Brown coal is found at the Malvern Hills, Homebush, Whitecliffs, Springfield, Mount Somers, Albury, and various other places. Lignite is also commonly distributed. For the year 1895, the output from 12 collieries, employing 38 hands, was 11,822 tons, bringing the total amount raised from 16 collieries up to the 31st December, 1895, to 326,815 tons. The seams worked vary from 16ft. to 2ft. 3in., the average width being 8ft. At Acheron, near Lake Coleridge, a true anthracite is found, the other pits in the district being of brown coal or lignite.

Building-stones.

The building-stones of Canterbury comprise some excellent varieties. The Halswell quarries produce an exceedingly hard and close-grained stone of a dull leaden-grey colour. Granular trachytes are obtained from Governor's Bay, Lyttel-

ton; porphyrites at Malvern Hills; good limestone at Malvern Hills, Waikari, Mount Somers, and various other places; bluestone rock is found at Timaru suitable for millstones. There is abundance of limestone in North Canterbury, Mount Somers, Castle Hill, and various other parts, which is well adapted for making lime.

Fisheries.

Deep-sea fishing is carried on from Lyttelton and Akaroa, the kinds of fish chiefly caught being groper (hapuku), ling, conger, moki, butterfish, barracouta, soles, whiting, red-cod, herrings, guffy, and garfish. From Lake Ellesmere and the river-estuaries excellent flounders are obtained. In 1895 there were employed on the lake and along the coast about 70 boats, manned by over 100 men.

Trout thrive amazingly in the rivers and fresh-water lakes, affording excellent sport.

Manufactories.

Excluding mines and quarries, the total number of manufactories in Canterbury in 1896 was 448, employing 4,945 males and 1,109 females, their annual wages respectively being £376,748 and £34,973; the number of engines 296, of 4,333-horse power.

The total value of manufactures for 1895 was £2,629,822, and the value of land, machinery, and buildings was £1,178,112. Included in the above were 20 printing, 9 agricultural-implement, 27 coach-building and -painting, 29 fellmongering, tanning, currying, and wool-scouring establishments, 5 ship- and boat-building works, 9 sail- and oilskin-factories, 3 woollen-mills, 5 clothing, 17 boot-and-shoe factories, 4 rope-and-twine works, 5 flax-mills, 5 boiling-down, meat-preserving, and freezing works, 14 cheese- and butter-factories, 32 grain-mills, 3 fruit- and jam-making works, 16 breweries, 10 malt-houses, 30 aërated waters and cordial works, 6 sauce- and pickle-making factories, 5 soap- and candle-works, 22 sawmills and sash-and-door factories, 4 gasworks, 15 brick, tile, and pottery manufactories, and 10 iron- and brass-foundries.

Institutions.

As an indication of the progress of the district, it may be noted that there were in April last seventy-three public libraries, mechanics' institutes, and scientific institutions, with a membership of 3,647; and 277 churches or chapels, attended by 42,615 persons.

Educational.

Primary Schools.—The district is divided into two parts, termed North and South Canterbury, each presided over by an Educational Board. Under the control of the Boards schools have been established throughout the whole country wherever population warrants their erection.

The number of children attending the public primary schools in Canterbury, in December, 1895, was 26,699. Average daily attendance, 22,128. Number of teachers—males, 295; females, 398: total, 693: and 59 sewing-mistresses. Number of schools, 252.

There is a Normal School at Christchurch for the training of teachers.

Secondary Education.

For the further education of children ample provision has been made by the establishment of secondary schools. The principal schools of this class are the Boys' and Girls' High Schools at Christchurch, Rangiora, Ashburton, Timaru, Waimate, Akaroa, and Temuka. For more advanced students Canterbury College, Christchurch, is available. This institution was founded and endowed by the Provincial Government in 1873. It is presided over by a Board of Governors. The teaching staff comprises eight professors and three lecturers, and the number of students attending lectures is over 300.

It should be recorded here that the Provincial Government of Canterbury was fully alive to its duties as regards higher education. It made reserves for the purpose of endowment for the following objects: (1) College, 101,640 acres, reserved June, 1873; (2) technical science, 103,000 acres, reserved July, 1873; (3) School of Agriculture, 100,950 acres, reserved June, 1873; (4) Boys' High School, 9,220

acres, reserved at various dates; (5) Classical School, 8,953 acres, reserved at various dates. To these were subsequently added the following: (6) Girls' High School, 2,578 acres, reserved January, 1878; (7) Medical School, 5,000 acres, reserved December, 1877.

Private Schools.

There are numerous private schools, independent of the State, the chief amongst them being Christ's College, Christchurch, connected with the Church of England. The Roman Catholics support schools of their own in Christchurch, Lyttelton, Timaru, Addington, Papanui, Halswell, Ashburton, Arowhenua, and Waimate. There are besides, in Christchurch, some excellent private boarding- and day-schools for both boys and girls.

Other Institutions.

Canterbury has the advantage of possessing many flourishing public institutions. The School of Art, Christchurch, was established by the College Governors in 1882; the Art Gallery owes its origin to the Art Society, the site being the gift of the Government. The Canterbury Agricultural College, Lincoln, also founded by the College Governors, is surrounded by 660 acres of land. The commodious buildings, which cost over £20,000, provide accommodation for the Director and teaching-staff, and for forty-five students. The fees are on a low scale. The farm buildings are complete, and include a well-equipped dairy. Instruction is given in agriculture, chemistry, botany, mechanics, physics, surveying, &c. (See also special article, page 346, *ante*.)

The Public Library, Christchurch, under the control of the College Governors, contains reading-rooms, a circulating library of over 14,000 books, and a reference library of over 8,700 volumes. Numbers of magazines and newspapers are provided.

The Museum, Christchurch, is a handsome pile of stone buildings; the collections are large and varied. They are separated into two groups: (1) Those from New Zealand; (2) those from foreign countries. In the New Zealand department the skeletons of whales and moas, as well as the collections of shells (tertiary and fossils) and rocks, are specially good; and the Maori collection, exhibited in a Maori house, is also of considerable interest. In the foreign department, the geological, mineralogical, and ethnological collections are the most extensive, but there is also a good illustrative series of Egyptian and Roman antiquities, as well as of the remains of prehistoric man in Europe and America.

This institution owes its origin and success to the foresight, skill, and energy of the late Sir Julius von Haast, and to the munificence of the Provincial Government.

The philanthropic institutions embrace the Christchurch, Akaroa, Ashburton, Timaru, and Waimate Hospitals; the Sunnyside Asylum for the Insane; the Rhodes Convalescent Home; the Memorial Home for the Aged at Woolston; the City Mission and Destitute Men's Home, Christchurch; the Deaf-and-Dumb Asylum at Sumner; the Orphanage, Lyttelton; and the Industrial School at Burnham.

Towns.

Christchurch, the capital city of the Canterbury District, is situated on the plains. It is practically level, laid out in rectangular form, two miles by one mile and a quarter, and is intersected diagonally by a street. The streets are 66ft. in width. There are numerous open spaces, including the Cathedral Square in the centre, and Cranmer and Latimer Squares. The Avon, a pretty stream, overhung by willows, runs through the town, presenting from all points charming vistas. The city is surprisingly English in its appearance, architecture, and surroundings. The central portion, where stands the Cathedral, Government offices, and other substantial structures, has a handsome, well-built look. Other parts contain fine public buildings, such as the Museum, Canterbury College, High Schools, &c. The whole is admirably set off by Hagley Park, 400 acres in extent, the Domain and Botanical Gardens, 79 acres, Lancaster Park, the Town Belts, and other public and private gardens and plantations. The suburbs can show many handsome houses and beautifully kept grounds.

The city is surrounded by the populous boroughs and districts of Sydenham, St. Albans, Linwood, Papanui, Woolston, &c. The population of the city was at the last census 16,964, in 3,400 houses; including the adjacent boroughs and other suburbs the population amounts to 51,330. Tramways connect the city with the suburbs of Addington, Sydenham, and Papanui, and with the seaside villages of New Brighton and Sumner. The city has been drained at considerable expense, the sewage being conveyed three miles and discharged on the sand wastes near the sea A pure and copious water-supply has been provided by nature, and is obtained by artesian wells. The affairs of the municipality are controlled by the City Council, presided over by the Mayor. Christchurch is the centre of trade and commerce for the North Canterbury agricultural and pastoral country, and the head-quarters of many manufacturing industries, including carriage-, boot-, and clothing-factories, flour-mills, breweries, meat-preserving and -freezing, biscuit, planing and moulding, bicycle, and other works.

There are large and well-equipped show-grounds at Addington.

Recreation and amusement are provided for by the Theatre Royal and various public halls, the famous Riccarton racecourse, the numerous cricket and football grounds, &c., while boating men have the River Avon and the Heathcote estuary.

Christchurch is connected with the outside world by Port Lyttelton, seven miles distant. The railway-tunnel of 1¾ miles in length, through the Port Hills, is on this line. Christchurch is not only the centre of the splendid Canterbury Plains, but is also one of the chief railway centres of the colony. Addington railway-workshops are extensive and fully equipped.

Lyttelton, the chief port of the district, is situated on the northern shores of the inlet of that name, sometimes called Port Cooper. The surrounding country consists of high precipitous hills, which separate the harbour from Christchurch and the plains; but by the construction of the railway and tunnel the natural difficulties have been overcome, with the result that the whole of the imports and exports of northern and central Canterbury pass through Lyttelton. The origination and accomplishment of this great engineering work is due to the late William Sefton Moorhouse, at that time Superintendent of the Province. The natural advantages of the port have been enhanced by reclamation and harbour-works, which include two breakwaters, 2,010ft. and 1,400ft. in length respectively, extending from Officer and Naval Points, enclosing about 107 acres; long lengths of wharf accommodation, 10,041ft.; a patent slip for ships up to 400 tons; and a splendid graving dock 450ft. long, width on top and bottom 82ft. and 46ft. respectively, the entrance being 62ft. wide, well equipped with machinery and all requisites for repairs. Ships drawing up to 25ft. can berth alongside the spacious wharves and sheds. The railway, electric-light, machinery, and appliances are available throughout, which renders loading and unloading practicable both by day and by night. The town nestles on the side of the range, the streets being generally steep, flanked by solid stone buildings; and a background of green spurs and bold rocky faces gives to the whole a charming and picturesque appearance. The water-supply is obtained from artesian wells on the Christchurch side of the hills. To Christchurch there is a bridle-track over the range, and a carriage-road *viâ* Sumner. The harbour is well defended by fortifications and batteries on Ripa Island and the mainland. The population in 1896 was 3,898, with 801 houses.

Timaru, the third town in importance, is situated on the coast and railway-line between Christchurch (100 miles) and Dunedin (161 miles). It has a well-constructed artificial harbour, the port of shipment for the agricultural and pastoral districts of Geraldine, Timaru, and Waimate. The harbour is enclosed by a breakwater built of blocks of concrete; a rubble wall—the North Mole—starts from the shore a quarter of a mile away to the north, and extends easterly to a point 350ft. from the breakwater. The enclosed space is 50 acres. The town is picturesquely situated on rolling hills overlooking the sea. The streets are irregular, but the public and commercial buildings, churches, and private houses are generally well and handsomely built of stone. The chief industries are meat-freezing, saw-milling, flour-milling, &c. The town has a good high-pressure water-supply, and is connected by well-made roads with the surrounding districts, and by rail with Fairlie,

the route to the Mackenzie Country and Mount Cook. The population in 1896 was 3,613, with 744 houses.

Of other towns in Canterbury the following deserve mention: Rangiora, population, 1,869, with 382 houses, twenty miles from Christchurch by northern line of railway, is situated in the centre of a fine farming country, and possesses manufactories, including seven flax-mills, flour-mill, and brewery. The town and neighbourhood are much benefited by plantations.

Kaiapoi, on the Waimakariri, population 1,828, about fourteen miles from Christchurch by the northern railway-line, lies in a rich farming country, rendered pleasing and attractive by the extent and variety of plantations and gardens. There are factories and various industries, including ham- and bacon-curing, sawmills, brewery, and agricultural-implement works. Here also is the famed Kaiapoi Woollen-mill, which employs 600 hands when trade is brisk. The Waimakariri is navigable for small vessels to the centre of the town.

Ashburton, the newest of the towns, has a population of 2,082, with 380 houses, and is fifty-three miles from Christchurch on the southern trunk line. It is a well-built town, with extensive and beautiful recreation-grounds and gardens. It owes its existence to the settlement of the plains, the surrounding country being well adapted for farming. There are two breweries, a cordial-factory, three flour-mills, gasworks, ironworks, woollen-mill, brickworks, &c.

Geraldine, population 841, is situated on the Waihi River, four miles from Orari Railway-station, about eighty-six miles south-west from Christchurch. It is a neat and pretty town, in a first-class farming district, and has a beautiful park of native forest-trees.

Temuka, eighty-eight miles from Christchurch, on the southern railway-line, is a well-built town, with good agricultural land all round. It possesses three flour-mills, a butter- and cheese-factory, brewery, foundry, fellmongery and paper-mill. There is a beautiful park and domain. The population, with that of Arowhenua, is 1,449 persons.

Waimate, population 1,286, is situated on the Waihao Forks Railway, about four miles from Studholme Junction, some 111 miles from both Christchurch and Dunedin. This town is the centre for an extensive back-country, and a splendid agricultural area. It owes its origin to the sawmill industry of the Waimate bush. Industries: saw-milling, flour-milling, &c.

Akaroa, situated on the noble harbour of that name, was founded in 1840, in the first instance by the French. It is a quiet, picturesque little place, much patronised by Christchurch residents and others as a summer resort and watering-place. It was here that Captain Stanley hoisted the British flag on 11th August, 1840, when he took possession of the South Island on behalf of the Crown, forestalling the French by a few hours only.

THE OTAGO LAND DISTRICT.

By C. W. Adams, Chief Surveyor.

Boundaries and Area.

The Otago Land District lies between the 44th and 47th parallels of south latitude, and extends from 167° 20′ to 171° 10′ of east longitude. It is bounded on the north by the Canterbury Land District; on the south-east and south by the ocean; on the west and south by the Waikawa, Mokoreta, Slopedown, Waikaka, Chatton, Wendon, Waikaia, Gap, Rockyside, and Kingston Survey Districts, the western and southern shores of Lake Wakatipu, the Mid-Wakatipu, Mavora, Swinton, Eglinton, Arran, and Doon Survey Districts, and a straight line from the north-east corner of the last-mentioned district to the nearest arm of George Sound, and by George Sound to the ocean; and on the north-west by the ocean to Big Bay.

The district measures about 160 miles from Milford Sound on the west coast to Waikouaiti Bay on the east coast, and the same distance from north to south. Its area is 9,004,800 acres.

Physical Description.

The country generally is mountainous, the highest land being to the north-west, and culminating in Mount Aspiring, 9,960ft. above the level of the sea.

The west coast mountains are remarkably rugged and grand; and of the thirteen sounds that pierce this coast, three are within the limits of the Otago Land District, the remaining ten being on the west coast of the Southland District. These three are Milford Sound, Bligh Sound, and George Sound. Milford Sound, though only eight miles in length, contains some of the grandest scenery in the world; and fourteen miles inland from its head is the great Sutherland Waterfall, 1,904ft. high, possibly the highest waterfall known. Bligh Sound is smaller than Milford, and not nearly so interesting; but George Sound is larger, and very picturesque.

A tourist track has been opened from the head of Te Anau Lake to Milford Sound, and a practicable route has also been discovered, and a track partly formed, from the north-west arm of the middle fiord of Te Anau Lake to the head of George Sound.

Te Anau Track.—A guide works on this track from December to April. He carries a fortnightly mail between Lake Te Anau and Milford Sound, and also meets each trip of the "Tarawera." There is ample accommodation for tourists who wish to make the journey in short stages, as there are huts erected at six different places on the track.

For nearly one hundred miles inland from the west coast the country is very mountainous, but at a distance of sixty or seventy miles from the south-east coast-line it begins to get gradually lower, taking the form of rolling hills and downs along the sea-shore.

Rivers and Lakes.

The largest rivers are the Clutha, Taieri, and Waitaki: the first-named drains Lakes Wakatipu, Wanaka, and Hawea; the last, Lakes Ohau, Pukaki, and Tekapo, in the Canterbury District. Te Anau, the largest lake in the South Island, lies partly in the Otago and partly in the Southland District. The dimensions of these lakes are as follows:—

Lakes.	Length in Miles.	General Breadth in Miles.	Area in Square Miles.	Height above Sea-level in Feet.
Te Anau ...	38	1 to 6	132	694
Wakatipu ...	50	1 to 3½	114	1,069
Wanaka ...	29	1 to 3	75	928
Hawea ...	19	3	48	1,062
Ohau ...	11	1 to 3	23	1,720
Pukaki ...	11	2½ to 5	31	1,588
Tekapo ...	15	1 to 3½	32½	2,325

These lakes are situated in mountainous country; they are of glacial origin, and all very deep.

The Clutha River is the largest in New Zealand, and is estimated to discharge over 1,000,000 cubic feet per minute. It has a rapid current, but is navigable for small steamers for a distance of forty miles from its mouth. The Waitaki is not a navigable river. For some seventeen miles from its mouth the Taieri River is affected by tides, which run up one branch into Waihola Lake, and up the other branch as far as Greytown.

There is a small steamer on Waihola Lake, and another on the Taieri River at Henley. During the summer season both run excursion trips to the mouth of the river when required. The distance in each case is about eight miles.

Plains.

There are some considerable areas of tolerably level land in the interior, the largest being the Maniototo Plains, the Idaburn, Manuherikia, and Upper Clutha

Valleys. Their dimensions are approximately as follows: Maniototo Plains, length, twenty-eight miles; average breadth, ten miles; Idaburn Valley, twenty-five miles by four miles; Manuherikia Valley, thirty-five miles by four miles; Upper Clutha Valley, thirty-three miles by five miles.

The Taieri Plain, nearer the coast, is about the same size as the Idaburn Valley, and is very fertile. Other plains are the Waitaki in the north, the Tokomairiro, the Strath-Taieri, the Tapanui, and the fertile Inch-Clutha, lying between the two branches of the Clutha River, and consisting entirely of alluvial deposit. There is also a good deal of low country, chiefly rolling downs, on the south-west side of the Clutha near the sea.

Forests.

The forest-land lies mostly along the sea-coast, the largest area of bush being Tautuku Forest, about forty miles in length and fifteen miles in breadth. The western part of this forest is in the Southland District. The other principal forest areas are in the following localities, viz.: north of Dunedin, east of the Tapanui mountains, in the upper valley of the Waikaia River, and towards the north-west coast.

The forests of Otago contain a large variety of useful timber, both hard and soft wood; some being suitable for building purposes, while other varieties are highly ornamental, and much prized for cabinet-work.

Building Stones.

Building-stones of good quality are found in various places throughout Otago. The Port Chalmers quarries afford an inexhaustible supply of bluestone, a basaltic stone of great hardness and durability. A hard freestone of excellent quality is found at Waikawa, where there is a large hill of it close to the water's edge. Blocks of very great size can be obtained. A soft white building-stone—the well-known Oamaru limestone—is found in large quantities along the railway-line near Oamaru, from whence a good deal is exported to other parts of New Zealand, and to the neighbouring colonies. A similar kind of stone is found at Otekaike, about two miles from the railway-station, and it may be interesting to note that during the years 1891–93 about 3,000 tons of stone were sent from the Otekaike quarries to form the facings of the Melbourne Fish-market.

Coal.

No first-class coals have yet been discovered in Otago suitable for steamships making long voyages, but very excellent brown coal exists in various neighbourhoods, and is used on the railways in large quantities. There are seventy-two coal-mines at work in Otago, in twenty-two different places, furnishing very good fuel for household and domestic purposes. The output for 1895 was 182,331 tons. Beds of lignite are also found in numerous localities, chiefly round the margins of the old lake-basins, and along the courses of the older river-valleys.

Limestone.

Limestone is found in the following places: Oamaru, Otekaike, Otepopo, Waihemo, Maniototo Plains, Waikouaiti, Lower Harbour, Peninsula, Waihola, Millburn, and Wakatipu.

The Millburn Lime and Cement Company burn large quantities of lime at their Millburn works, from whence it is sent to all parts of Otago, for building purposes, gasworks, &c. It is also largely used in farming, and the productiveness of the Tokomairiro Plain has been greatly increased of late years by its application to the soil. Large cement-works belonging to the same company have been open for some years on the reclaimed land in Otago Harbour, near Dunedin. The cement manufactured at these works is considered fully equal, if not superior, to the best imported, and is largely used in building and other constructive works.

Climate.

The climate of Otago varies greatly in different neighbourhoods, and sometimes a distance of a few miles only separates districts very dissimilar in this respect. A large area in the interior of Otago has what may be called a dry climate. This

area includes the Maniototo Plains, the Idaburn and Manuherikia Valleys, and extends to Lakes Wakatipu, Wanaka, Hawea, and Ohau on the west and north, and to the Waitaki River on the north-east. From Oamaru the direction would be across country to the Lammerlaw Ranges, and thence to Mount Benger and the southern end of Lake Wakatipu. This part of the country is well adapted for sheep of all kinds, especially merinos. Some of the runs in the hilly country are capable of carrying 20,000 sheep.

Fruit.

There are some fine fruit-growing districts in the valley of the Clutha, from below Roxburgh right up to Lake Wanaka. The summers are dry and warm, and the soil suitable. Apricots, peaches, &c., come to maturity fully a month before they do at Dunedin, and grapes ripen in the open air. There is a great future for this neighbourhood in the growing of those varieties of fruit which agree with and thrive in a dry climate. The grape might be cultivated either for wine-making or for the table, and some varieties could be made into good raisins. The hops grown at Alexandra are far superior to any grown in other parts of the colony, and quite equal to the best Californian. The dryness of the atmosphere is favourable for preserving all kinds of fruit, while the Otago Central Railway will bring the neighbourhood into direct communication with a market.

Crops.

Cereals of all kinds do very well over nearly the whole of the province. The following are the agricultural statistics for Otago :—

	Acres.	Yield per Acre.	Total.
Wheat ...	50,130	32 bushels	1,604,160 bushels.
Oats ...	195,525	37 „	7,234,425 „
Barley ...	13,283	33 „	438,339 „
Rye ...	2,276	27 „	61,452 „

The average yield for wheat and oats is the highest in the colony, the root crops were also very heavy.

West Coast.

In marked contrast to central Otago is the West Coast District, which may be described as having a wet climate. Not that the number of wet days in the year is very great, but it is subject to very heavy rains from the north-west, the fall generally exceeding 100in. per annum. But, although wet, the climate is mild, and the vegetation is consequently luxuriant. The only inhabitants of this part of the country are Mr. and Mrs. Sutherland, who keep a house of accommodation for tourists at the head of Milford Sound. There are very few visitors to the Sounds during winter, but in summer the tourist traffic is considerable. Towards the south-east and south coasts of the district the climate is moist, being somewhat similar to that of Dunedin, where the average rainfall is 35in., distributed over 163 days in the year.

Stock.

The total number of sheep in the Otago Provincial District, including Southland, on the 30th April, 1895, was 4,365,661, of which rather more than two-fifths were merinos. On an average, about one-third of the flocks consist of breeding-ewes. The value of the Otago wool-clip is about £750,000. The shearing is mostly done by hand, but the Wolseley shearing-machines have been introduced on about ten stations, the number of machines in each woolshed varying generally from ten to fifteen, though there is one shed at Benmore, near Lake Ohau, where there are twenty-eight machines driven by a turbine.

In January last there were 52,795 horses; 72 mules and asses; 169,590 cattle; and 37,646 pigs.

The rabbit-pest is still a severe tax on the stockowners; the number of skins exported last year for the whole colony being 15,229,314, of which number Otago contributes about one-third.

Freezing Establishments.

There are three principal freezing establishments in Otago—namely, at Oamaru, at Burnside, and at Port Chalmers. At Oamaru there are two Bell-Coleman machines. The capacity of the smaller one is 60,000 cubic feet of cold air per hour; and the larger one can supply 90,000 cubic feet per hour. The smaller machine is driven by water, obtained from the Oamaru town supply, the larger by steam. Together they can freeze 800 sheep a day, and there is storage-room for 20,000 carcases. At Burnside there are two Haslam machines, both driven by steam. One can supply 40,000 cubic feet of cold air per hour, and the other 60,000. The Burnside works can freeze 500 sheep a day, and have storage-room for 14,000 carcases. The Port Chalmers freezing-works, erected last year by the Otago Dock Trust, cost £4,500. They are used principally for the storage of butter prior to shipment, but the freezing-chambers have also been used for sheep, rabbits, and fish. The refrigerating machinery includes a 12-ton Hercules refrigerator. The capacity of the building is 30,000 cubic feet, and 50 tons of butter can be handled per week.

Woollen-mills.

There are four woollen-mills at work in Otago, employing some 780 hands. The amount paid in wages is about £50,000 per annum, and the machinery is 750-horse power. £64,000 worth of wool and other materials are used per annum, and the turn-out of manufactured goods exceeds £140,000 yearly. The woollen industry in Otago is of greater magnitude than in any other district of New Zealand.

Clothing-factories.

In clothing-factories, also, Otago takes a prominent place, having nine, employing 700 hands, whose wages amount to £28,000 per annum.

Dairy-factories.

Otago takes also a good position as regards cheese- and butter-factories and creameries, whether in respect of the number of hands employed, wages paid, or the value of the annual output, which amounts to about £93,875. There are forty-four factories at present, and new ones are being started from time to time. From Port Chalmers this year were shipped 1,627 tons of cheese, and 159 tons of butter.

Gold Production.

Otago produces about one-third of all the gold taken out in New Zealand. The quantity of gold obtained last year amounted to 87,694oz., having a value of £353,796. Number of Europeans engaged, 2,834; and number of Chinese, 974. Area at present held under gold-mining lease, 6,600 acres; area surveyed last year for gold-mining, 2,887 acres; area of applications now under survey, 1,374 acres.

Gold is found very generally distributed throughout Otago, except in the southern portion of the district. The principal localities are: Clutha Valley, Tuapeka, Shotover, Cardrona, Tinker's, St. Bathan's, Mount Ida, Nevis, Bannockburn, and Maerewhenua.

Chief Towns.

The following are the chief towns of Otago, with their population, including all having 1,000 inhabitants and upwards: Dunedin and suburbs, 47,280; Oamaru, 5,225; Port Chalmers, 2,084, shipping included: Mosgiel, 1,382; Milton, 1,139; Kaitangata, 1,362; Lawrence, 996.

City of Dunedin.

Dunedin, the capital city of Otago, is situated at the head of Otago Harbour, which is divided into two parts—the upper and lower. The lower harbour is six miles long from Taiaroa Heads to Port Chalmers. The upper harbour, from Port Chalmers to Dunedin, is seven miles in length. Dunedin and Port Chalmers are also connected by railway.

Although the hills surrounding Dunedin are rather tame in character and outline, the city itself is picturesquely situated. The business part of it is on level land

near the harbour, and the residences occupy the sloping hills which rise on the west side of the city. The city proper is about two miles and a half long by seven-eighths of a mile wide, and is bounded on the land side by what is called the Town Belt. This reserve averages one-fifth of a mile in width, and comprises 500 acres, a great part of which is virgin bush. A pretty road, called the Queen's Drive, has been laid out through the Belt from end to end, from which many fine views of the town and harbour can be obtained.

It is thirteen miles down the harbour to the Heads in a north-easterly direction, but the Ocean Beach, lying to the south-east, is only two miles from the centre of the city, and the favourite seaside resort—St. Clair—is about three miles. Trams run to both these places at short intervals. The city is also connected with the suburban boroughs, lying on the hills overlooking the town, by excellent cable-tramways. The Botanical Gardens to the north of the city are well laid out, the native bush contrasting with the cultivated parts. The Reservoir also, which is within easy walking distance, and the drive to Blueskin Bay, have many beauties.

Dunedin is well supplied with elementary schools, there being six large schools in the city proper, and eight more in the suburbs.

There is also in Dunedin a training-college for teachers. The students in training number fourteen men and twenty-eight women. They devote every fifth week during the session to practice in teaching and management of classes in the ten associated schools of the city and suburbs.

The School of Art and Design is in the same building as the Normal School, and has a staff of six teachers.

The Otago Boys' High School, the largest high school in the colony, stands on a commanding plateau 300ft. above the business part of the city and the harbour. The school was opened on the 3rd August, 1863, in the building in Dowling Street now occupied as the Girls' High School. The new buildings were opened by Sir William Jervois, Governor, in February, 1885. The teaching staff, including the Rector, is nine; the attendance is 210.

The Otago Girls' High School was opened on the 6th February, 1871, with a roll of 78 pupils, and by the end of the quarter there were 102 in attendance. The present attendance is 145, with a teaching staff of nine. Otago holds the proud distinction of having established the first Girls' High School in the Australasian Colonies. Among the earnest band of workers who laboured to establish this first High School for girls the name of Miss Dalrymple stands pre-eminent, and will ever be held in grateful remembrance by the people of Otago.

The Otago University was founded in 1869, and opened in 1871. It is well housed in a handsome pile of buildings in the domestic Gothic style. There are four separate faculties in the University—viz., arts and science, law, medicine, and mining. The School of Medicine provides the full course for a medical degree of the University of New Zealand. There is a Medical Museum in the University buildings containing anatomical, pathological, and other preparations and models. The teaching staff numbers at present twenty-three professors and lecturers. Of undergraduates keeping terms there are 226—viz., 181 men and 45 women. The University Library contains over 5,000 specially selected volumes, and is open to the public under certain conditions for purposes of reference. The Chemical and Physical Laboratories are well fitted up, and furnished with all necessary instruments and appliances. There are six scholarships tenable at the University, ranging in value from £15 to £40 per annum.

The public Museum, of which the Professor of Biology is Curator, is under the control of the University Council. It is situated in Great King street, about five minutes' walk from the University. There is an art gallery attached, which contains some good works of art. Up to the present time only the central portion of the original design has been erected.

The Dunedin Athenæum and Mechanics' Institute possesses a fine library of over 16,000 volumes, and a membership of over 1,000 subscribers. Besides the Circulating Library there is a Reference Library, and two good reading-rooms, well supplied with newspapers and magazines.

There are some fine specimens of architecture in Dunedin, the buildings for the most part having an air of permanence and solidity. Some of the churches are very handsome, and St. Joseph's Cathedral (Roman Catholic) has a particularly imposing appearance, although only about one-third of the original design has been completed. It is built of stone in the decorated Gothic style. The portion at present constructed will seat 1,000 persons, and has cost £23,000.

The First Church, in Moray Place, and Knox Church, in George street, belong to the Presbyterians, and are both handsome stone structures. The Cargill Monument, which was erected to the memory of the late Captain Cargill, the founder of the Otago settlement, stands in the Triangle, between the Customhouse and the Bank of New Zealand. It is an ornate specimen of early decorated Gothic.

Towns and Surrounding Country.

Port Chalmers (eight miles from Dunedin) situate on Otago Harbour, midway between the Heads and Dunedin, has a population of nearly 2,000 inhabitants. It is the chief port of Otago, and possesses every accommodation for Home vessels, including dry dock, 80-ton sheer-legs, steam-hammer, and other appliances, besides several private foundries, cool-storage chamber, &c. The Port Chalmers graving dock is described in the article on page 57.

Leaving Dunedin by the northern railway, winding in and out through the hills which surround the town, and skirting the precipitous cliffs of the coast-line, the first station of importance reached is Waitati, a favourite seaside resort in Blueskin Bay; distance, seventeen miles. Fifteen miles beyond is Waikouaiti; population, 760; pleasantly situated on the Hawksbury lagoon, the centre of a flourishing farming country. The next place of note is Palmerston, forty-one miles from Dunedin, with 800 inhabitants. A branch-line leaves Palmerston and runs nine miles up Shag Valley to Dunback. Six miles further on the main line there is a branch to Shag Point, a coalfield, with two pits being actively worked.

Oamaru (seventy-eight miles) is the second town in Otago, having a population of 5,300. It is the centre of a large farming district, and has a good harbour, formed by a concrete breakwater, for the reception of ocean-going ships. The chief exports are wool and grain. A branch-line runs from the junction near Oamaru up the Waiareka Valley to Ngapara, seventeen miles, and Tokaraki, twenty-six miles from Oamaru, and another seven miles by road brings us to Livingstone.

Starting from Oamaru, and proceeding to Central Otago, *viâ* the valley of the Waitaki River, the first part of the journey is accomplished by rail across the fertile Papakaio Plains to Awamoko (ninety-six miles), and thence following up the Waitaki River past Duntroon to Kurow (120 miles). At Kurow the traveller leaves the railway and follows the course of the Waitaki through pastoral country to Rugged Ridges Station (133 miles); a little beyond Rugged Ridges the road leaves the Waitaki River, and crossing the Ahuriri Pass (141 miles), strikes the Ahuriri River, which it follows up past Omarama Station (158 miles) to the junction of Longslip Creek; it then ascends this creek until Liudis Pass saddle is reached (172 miles), at a height of 3,185 feet. Here begins the descent to the Clutha Valley *viâ* Morven Hills Station (181 miles) and Tarras Station (200 miles). From Tarras Station the road runs through settled farming country up the Clutha River, which is crossed by means of a punt at Newcastle (219 miles), and four miles more brings the traveller to Pembroke, on the southern shore of Lake Wanaka.

From Dunedin the main trunk railway runs southward to Invercargill, a distance of 130 miles. Passing through the Caversham Borough and tunnel the traveller reaches Burnside (five miles) and Abbotsford (six miles), industrial centres, with coal-mining, tanning, iron-smelting, and other works. Farther on is Wingatui, the junction of the Otago Central Railway; and ten miles from Dunedin is Mosgiel, a rising township with 1,400 inhabitants, noted for its woollen mills. The railway-line now skirts the Taieri Plain, an alluvial flat eighteen miles long by five miles broad; the most fertile portion of Otago. A branch-line from Mosgiel junction runs to Outram (nineteen miles), on the farther side of the Taieri Plain. Passing the smaller Townships of Greytown and Henley, and Lakes Waihola and Waipori, the line strikes Milton (thirty-six miles). Milton, in the middle of the Tokomairiro Plain, is a town

of 1,139 inhabitants, with flour-mill, dairy-factories, flax-mill, pottery works, and tannery. The next place of importance is Balclutha (fifty-three miles), on the banks of the Clutha River, with flax-mills, dairy-factories, and chicory works; population about 950. Kaitangata, situated lower down the Clutha River, and connected by a branch-line, has extensive coalfields, and a population of 1,400. Leaving Balclutha, the main line runs through the Clutha downs, passing the small centres of Waitepeka, Warepa, Kaihiku, and Waiwera, and reaches Clinton (seventy-three miles), on the Waiwera stream, a favourite resort of anglers. The next station of note beyond Clinton is Waipahi Junction (eighty-three miles), on the Waipahi River, likewise a favourite fishing-ground. Further on is Gore (ninety-nine miles), on the Mataura River, in the Southland district. Gore is a fast-rising township of over 2,000 inhabitants, with paper-mill, flour-mill, freezing-works, dairy factory, coal-mines, &c.

A branch-line from Waipahi follows up and crosses the Pomahaka River and connects Tapanui (ninety-six miles), Kelso (ninety-eight miles), and Heriot (102 miles).

The Otago Central Railway starts from Wingatui, crosses the Taieri Plain, and then winds round to the Taieri River, which it follows up to the present terminus at Hyde. In its course along the river it runs for some distance through a rocky gorge, but after crossing the Sutton Stream enters Strath-Taieri—a comparatively flat, open country. Near Hindon Station (twenty-five miles), in the Taieri Gorge, and Barewood (thirty-six miles), there are quartz-reefs being worked. In traversing the Strath-Taieri the line passes the Blair-Taieri Village Settlement (forty-four miles), Middlemarch, a rising township (forty-eight miles), and reaches Hyde (sixty-four miles), the present limit, although the formation is well-advanced as far as Hamilton's. When this section is complete the Maniototo Plain will be tapped, and the extension of the line to Clyde presents no engineering difficulties. Central Otago has a great future before it, as in the opinion of experts it is naturally adapted for producing fruit of all kinds in perfection.

Another means of access to Central Otago is by the Clutha Valley.

Two miles beyond Milton the Lawrence branch leaves Clarkesville Junction, runs up the Tokomairiro River and the gorge of Manuka Creek, and down to Waitahuna (fifty-three miles), and Lawrence (sixty miles), goldmining centres, with an aggregate population of 1,500. Gold was first discovered here in 1861, and the mines are still yielding freely. From Lawrence a coach runs to Beaumont (seventy-two miles), on the Clutha River. Crossing the Beaumont Bridge the road follows the west bank of the Clutha, passing numerous dredging-claims. At eighty-nine miles is Ettrick, and seven miles further on is Roxburgh—the Teviot—(ninety-six miles), a town of 450 inhabitants. Recrossing the Clutha River by the Roxburgh Bridge, and proceeding up the east bank, the traveller reaches Alexandra South (124 miles), at the junction of the Manuherikia River with the Clutha, and Clyde—the Dunstan—(130 miles), the chief town of Vincent County. The next place of importance is Cromwell (143 miles), at the junction of the Kawarau River with the Clutha. Cromwell is a small town of 550 inhabitants, and has a good bridge over the Clutha River. If the traveller wishes to pursue his journey farther he can either follow the road up the Clutha to Newcastle and Pembroke, on Lake Wanaka, or take the Kawarau Gorge road by way of the Crown Terrace to Queenstown, on Lake Wakatipu.

Queenstown, a picturesque township situated on the shores of Lake Wakatipu, has a population of 800, and is the centre of a large gold-mining district. The chief feature of Queenstown is the grand mountain and lake scenery in the neighbourhood, which attracts large numbers of tourists every year. There are two ways of reaching Queenstown—the one by the Clutha Valley and Kawarau Gorge, as above described, and the other by rail to Kingston, at the foot of Lake Wakatipu, and thence by steamer, which runs to suit the trains.

The Tautuku bush, in the south of Otago, has only lately been opened up, but already a large number of settlers are making their homes there. Starting from Balclutha the Catlin's River branch-line runs southwards to Romahapa (sixty miles) on the crossing of the main road to Port Molyneux, thence to Glenomaru (sixty-four miles) the present limit; although the formation of another section towards Owake

is nearly complete. The Catlin's-Waikawa main road is formed the whole way through, as are also numerous district roads, and the adjacent lands are being taken up as fast as they are thrown open.

Railways.

The principal lines are as follows: (1.) The main trunk line from Dunedin to Christchurch, with branches from Oamaru to Hakateramea, forty-three miles; and Oamaru to Ngapara and Tokoraki, twenty-five miles; also, Palmerston to Dunback, nine miles. (2.) The main trunk line, Dunedin to Invercargill, with branches, Mosgiel to Outram, nine miles; Milton to Lawrence, twenty-four miles; Stirling to Kaitangata, five miles; Balclutha to Glenomaru, twelve miles; and Waipahi to Heriot, twenty miles. (3.) The Otago Central, from Wingatui to Hyde, fifty-six miles.

Statistical.

The total population of the Otago Provincial District at date of last census, 12th April, 1896, was 163,944.

Area of Otago Land District: Open land below 2,000ft., 5,252 square miles; forest-land below 2,000ft., 1,919 square miles; open land above 2,000ft., 6,480 square miles; forest-land above 2,000ft., 419 square miles; area of lakes, &c., 275 square miles: total, 14,345 square miles.

The following table shows the disposition of the land in the Otago District on 31st March, 1896:—

	Holdings.	Acres.
1. Crown lands alienated, comprising freehold land and vested reserves	...	2,636,898
2. Lands held on deferred payment, including village settlements	198	49,381
3. Lands held on perpetual lease, including village settlements	583	105,262
4. Lands held on lease in perpetuity, including village-homestead allotments	499	119,173
5. Lands acquired and disposed of as lease in perpetuity under Land for Settlements Acts	129	15,965
6. Lands held under occupation-with-right-of-purchase clause	93	16,611
7. Lands held as village-homestead special settlements ...	93	1,525
8. Lands held by special-settlement associations	15	2,955
9. Lands held as improved-farm settlements	76	9,340
10. Lands held under Mining Districts Land Occupation Act	47	1,717
11. Lands held as small grazing-runs	247	475,892
12. Lands held under pastoral license, not including bush ...	242	3,999,669
13. Lands open for application under pastoral licenses ...	12	114,416
14. Lands held under agricultural lease on goldfields ...	30	2,020
15. Lands held under lease and license for miscellaneous purposes, exclusive of gold-mining	304	105,669
16. Crown lands open for selection (including 3,120 acres under Land for Settlements Act)	...	77,400
17. Crown lands being prepared for selection (including 6,564 acres under Land for Settlements Acts)	...	19,240
18. Lands held by aboriginal natives	...	16,140
19. Tautuku Forest, unsurveyed	...	70,800
20. Balance of Crown lands, including mining reserves, public reserves not vested, bush-lands, roads, barren country, &c.	...	1,164,727
21. Lakes, and Clutha and Taieri Rivers	...	176,000
Total area of district (14,345 square miles),		9,180,800

Item No. 1 includes 340,517 acres of vested reserves, of which about 26,470 acres have been sold, leaving a balance of 314,047 acres, a portion of which will probably be open for sale at a future date.

Tenants of lands included in 2 and 6 have the right of acquiring the freehold, as have tenants of 3 up to twelve years from the date of issue of the lease, and of 14 in the case of leases issued prior to the Act of 1891. There is no right of

acquiring the freehold for tenants of lands included in 4, 5, 7, 8, 11, 12, and 15, and in the case of No. 9 the right of acquiring freehold applies to portions only.

The Crown lands proper are (16) open for selection (see Crown Lands Guide), 77,400 acres; and (17) being prepared for selection, 19,240 acres.

Total area under cultivation (Otago Provincial District) on 31st March, 1896: Land broken up but not planted, 33,442 acres; land under crop, 331,735 acres; land broken up and grassed, 1,393,810 acres; land grass-sown without being previously ploughed, 348,110 acres; land in garden, 4,311 acres; land in orchard, 1,782 acres; land in plantation, 4,182 acres.

Local Industries.

There is not space to give in detail particulars of the various local industries throughout Otago and Southland, but amongst others may be noticed the following: There are four bone-mills and artificial-manure factories, where substances that might otherwise go to waste, or pollute the air and water, are turned to profitable account, and made to increase the fertility of the soil. The lime- and cement-works at Dunedin have already been mentioned. There are thirty brick-, tile-, and pottery-manufactories, the largest pottery-works being at Milton, where all kinds of useful household crockeryware are made. Twelve agricultural-implement factories are in operation, and turn out annually a large supply. There are fourteen boot- and shoe-factories; six boat-building, eighteen coach-building, twenty-eight fell-mongering, tanning, and wool-scouring establishments; twenty-two aërated water- and cordial-manufactories, seventeen breweries, five coffee- and spice-works, three fruit- and jam-factories, six confectionery works, one ink-making establishment, three paper-mills, six rope- and twine-works, one soap- and candle-making establishment, six gasworks, and fifty-one sawmills and door- and sash-making factories. There are also twenty foundries, including brass-founders and coppersmiths, beside stove and range manufactories, iron-rolling works, and works for making every description of engineering and mining machinery and appliances; and lastly, there is a piano manufactory in Dunedin, which has been open for the last ten years. During that period 210 pianos have been made and about 180 sold. The types manufactured are cottage pianos and upright grands, at prices ranging from thirty to sixty guineas. The present output is from twenty-five to thirty per annum.

THE SOUTHLAND LAND DISTRICT.

By G. W. Williams, Chief Surveyor.

Physical Features.

The Southland District, comprising the Counties of Southland, Wallace, Fiord, and Stewart Island, bounded on the north and east by the Otago District, and on the south and west by the Tasman Sea, may be roughly said to lie between south latitudes 45° and 47° and east longitudes 166° 15′ and 169° 15′. For administrative purposes, however, the Snares, Auckland, Enderby, Campbell, Antipodes, Bounty, and all other islands within the limits of the colony south of the 47° parallel of south latitude are included in it.

Area, Nature, and Disposition of Lands.

The total area of the district, including Stewart Island, but exclusive of Solander, Ruapuke, and the other small islands enumerated above, is 6,966,592 acres, of which 500,000 are covered with bush. The bulk of the bush-land lies between the lakes and the south and west coasts, in the neighbourhood of Forest Hill, Hokonui, Waikawa, &c. The timbers of commercial value are totara, rimu, miro, matai, rata, and kamahi, in mixed bushes; but *Fagus fusca* and other beeches predominate on the high lands between the lakes and the fiords on the west coast.

The open land in its natural state carries tussock and snow-grass, fern, flax, and manuka, &c., and there is a very considerable area of marsh-land, interspersed here and there with peat bogs.

The disposition of the land is as follows:—

	Acres.
Crown lands alienated to date	1,543,005
Lands held on deferred payment	37,156
Lands held on perpetual lease	39,046
Lands held on lease in perpetuity	72,287
Lands held in occupation with right of purchase	21,951
Village-homestead special settlements	637
Small grazing-runs	57,942
Pastoral runs	1,090,281
Endowments and miscellaneous purposes	589,781
Open for selection	305,775
Under preparation for settlement	55,810
Pastoral runs open for lease	1,210,340
Held by aboriginal natives	11,890
Lands of small value not open for sale	577,481
Barren mountain-tops, &c.	1,353,210
Total area	6,966,592

The most striking feature of this district is the number of well-defined rivers and valleys, the latter often widening out to such an extent as to form very extensive plains. Commencing with the eastern side, the Mataura, Oreti (or New River), Aparima (or Jacob's River), and Waiau are the most prominent illustrations of this; but these rivers by no means exhaust the list, as they all have numerous tributaries, which exhibit the same features on a smaller scale.

Speaking generally, the watersheds of these rivers do not attain any great height until followed far inland, and near the great lakes to be presently noticed. From what has been said above it follows that the extensive plains and valleys referred to are of alluvial formation, in many places of very rich and fertile quality, and capable of raising crops of every known product, subject, of course, to climatic limitations. Generally these plains and valleys rise from the river-levels in a very gradual slope, sometimes into a series of terraces from 10ft. to 50ft. in height, and sometimes into undulating hills, intersected at frequent intervals by lateral gullies, affording natural drainage and an abundant supply of water.

These hills are covered with an indigenous growth, consisting of tussock and other grasses, fern, flax, &c., and even in their native state afford excellent grazing for sheep.

Near the large lakes, such as Wakatipu, Te Anau, Manapouri, Hauroto, and others, and between these and the West Coast, the country becomes very high, often reaching 5,000ft. and 6,000ft. above sea-level, with very steep and rugged spurs and ravines, these in most cases being covered with a dense growth of timber, principally of the birch or beech tribe, for two-thirds of their height: the tops, however, often carry tussock and other herbage, affording admirable pasture for sheep in summer; but stock have to be removed from April to October, during which period this country is generally covered with snow.

Southland does not contain so much forest as most of the North Island districts, nevertheless there is a very considerable quantity in the eastern, southern, and western parts, and a large export trade is done in the different kinds of pine and other timbers used for building, engineering, and furniture-making, &c.

From what has been said of the river systems it will be evident that the country is well supplied with water, although none of the rivers can be used for purposes of internal communication; but the plains are traversed by railways for considerable distances from the principal towns, and where the railways end communication is continued by good roads, so that there is probably no part of the colony so well off for means of transit.

Agriculture.

Having already touched on the character of the soil, it only remains to say that the plains, terraces, and lower hills are well adapted for raising wheat, oats, and other cereals, turnips, mangolds, beets, and the various other crops common to temperate climates. Wheat is not so widely grown as it might be, for the reason, probably, that the pastoral branches of farming receive more attention than the agricultural, and wheat is not required for these; whereas oats are largely grown to feed sheep in the form of chaff; turnips also are much cultivated for winter food. Where wheat is grown the yields are very satisfactory, ranging from 40 to 60 bushels per acre, while oats frequently give 80 to 100 bushels.

Linseed is now receiving some attention from farmers, as they find ready sale for it to the manufacturing chemists at remunerative prices, a fair crop yielding over £5 per acre.

Dairy-farming, &c.

Dairy-farming is becoming a very important industry, and is rapidly expanding under the impetus it has received through improved appliances and the favourable state of the Home markets. There are a number of cheese- and butter-factories, and one for preserving milk on the Swiss system. One firm makes Stilton cheese, which is considered to be equal to cheese of the same kind made in England.

Sheep-farming.

By far the most important industries are those connected with the raising and export of mutton and wool. Some years ago sheep-farming was much hindered by the inroads of rabbits; but owing to the repressive measures adopted there has been a marked abatement of the pest, even on high back-country, and thus it has come to pass that country which a few years ago was absolutely denuded of vegetation now shows unmistakable signs of recovery. The hill-country, although it does not carry a large proportion of stock to area, is eminently healthy. The average carrying-capacity over the whole district would probably be under one sheep to the acre. Until within the last few years most of the runs were stocked with merinos, but owing to the decline in price of merino wool, and to the carcase being unacceptable to the European market, these sheep have, generally speaking, been replaced by Leicesters, Lincolns, Romney Marsh, Cheviot, and crossbreds of various kinds, better suited to the existing demands. Large establishments for slaughtering and freezing sheep are at work. The latest of these, erected near the Bluff Harbour, is considered to be the most complete in the colony, being provided with all possible labour-saving machinery and appliances for working up the by-products into articles of commerce.

Coal and Gold.

Extensive seams of coal and lignite are distributed over the district, and in many places the annual output is considerable. Peat is also found in some up-country neighbourhoods, and is used for fuel where wood and coal are scarce. Gold is found all over the district, and a large number of persons are engaged in obtaining it either by sluicing or dredging. A considerable amount of capital has been invested in beach-dredges worked by steam. Not long ago gold-bearing reefs, reported to be of great richness, were discovered at Wilson's River, near Preservation Inlet.

Fish.

Salt-water fish abound in great quantities in the waters surrounding Stewart Island, and oysters are found on banks between that island and the Bluff. All the large rivers, and many of the tributaries, are well stocked with trout, and one river —the Aparima—had salmon-spawn put into it some years ago.

Fruit.

The small English fruits, such as gooseberries, currants, raspberries, strawberries, &c., grow in great profusion, as do also apples. Stone-fruits are not so common although peaches, nectarines, apricots, &c., do well when trained against nursery, walls in favourable aspects.

Climate.

The climate is bracing in winter, and warm and genial in spring and summer. The old residents state that there has been a marked decrease in the rainfall within the last decade. No regular observations have been recorded for the last few years, but it is believed that the average is about 30in. a year. It may, however, be observed that more rain falls near the coast than inland, and also that the rainfall is more evenly distributed throughout the year than is the case in the northern part of the colony. The temperature varies from 40° in winter to 70° in summer.

Towns.

Invercargill, the chief town, was from the first well laid out with wide streets, and liberal reserves in the town belts for recreation purposes. The Corporation exercises a paternal care in providing water, gas, and in disposing of sewage, &c., for the citizens; and the streets are well lighted, paved, and maintained. Artesian water is pumped to the top of a handsome brick tower—which, by the way, is a very conspicuous landmark—and stored there in a tank, from which most of the houses within the town boundaries are supplied. The population, including suburbs, is nearly 10,000. All religious denominations are represented. There are rope-and-twine, carriage- and implement-factories, flour- and saw-mills, fellmongeries, brick- and pottery-works, iron-foundries, and various other industries. Exceptionally good beer is brewed here, and there are three first-class hotels. The Government Buildings, lately enlarged, are on a scale not often seen in a town of the same size. A clock and chimes of New Zealand make have been placed in the central tower. Although the Bluff is the principal port, Invercargill is provided with a second harbour for smaller vessels, in the New River Estuary, where there is a jetty with appliances for handling and receiving goods within the town boundaries.

The Bluff Harbour, which is connected by rail with Invercargill, does a very large shipping business, and derives additional importance from being the first and last port of call for steamers trading with Victoria and Tasmania.

Next in size to Invercargill is the Town of Gore, situated on the Mataura River, and at the junction of the trunk railway with the Waimea Plains Branch. Owing to this fact, and to the goodness of the land in the neighbourhood, Gore is rapidly growing in size and importance.

Riverton is a pretty little town, about twenty-five miles from Invercargill, with which it is connected by rail, and is situated on the estuary of Aparima or Jacob's River. This is the oldest settlement in Southland, and was a great resort for whalers in former years. The harbour is available for coasting-vessels, but the principal carrying-trade is done by rail. There are several sawmills in the neighbourhood

The Town of Winton is on the Invercargill-Kingston Railway, about twenty miles distant from the latter, and is the centre for a good farming, sawmilling, and coal-mining district.

Lumsden is the junction of the Kingston and Waimea Plains lines. Coaches starting from this place take passengers and mails to the Lake country.

East of Invercargill is Fortrose, on the estuary of Mataura River, which can be entered by coasting-steamers. This place is surrounded by an exceptionally fertile agricultural and pastoral country.

Eastward of Fortrose and about midway between that place and Catlin's River is Waikawa, a newly-settled township with a first-class harbour for coasters, and a very large area of Crown land around it available for settlement. Steamers trading with Dunedin and Invercargill call here and at Fortrose at regular intervals.

Crown Lands for Disposal.

There remains for disposal a very large area of Crown land, probably more than 500,000 acres, but this can be estimated only roughly, because much of the district west of Waiau River is practically unexplored. It is true that this is chiefly forest-land, but it is beginning to be recognised here, as in the North Island

that when such land is once cleared and laid down with grass it is distinctly superior to most open country for grazing purposes; and grazing is and will long remain the principal industry of the colony. The land referred to lies around Waikawa Harbour, along the Waikawa-Catlin's Road, between the Jacob's and Waiau Rivers, and to the west of the Waiau. Stewart Island also contains a wide extent of Crown lands, mostly forest-clad. There are also considerable areas of open hilly country, carrying natural grasses, still in the hands of Government. These are to be found in various parts of the district, but are being rapidly taken up.

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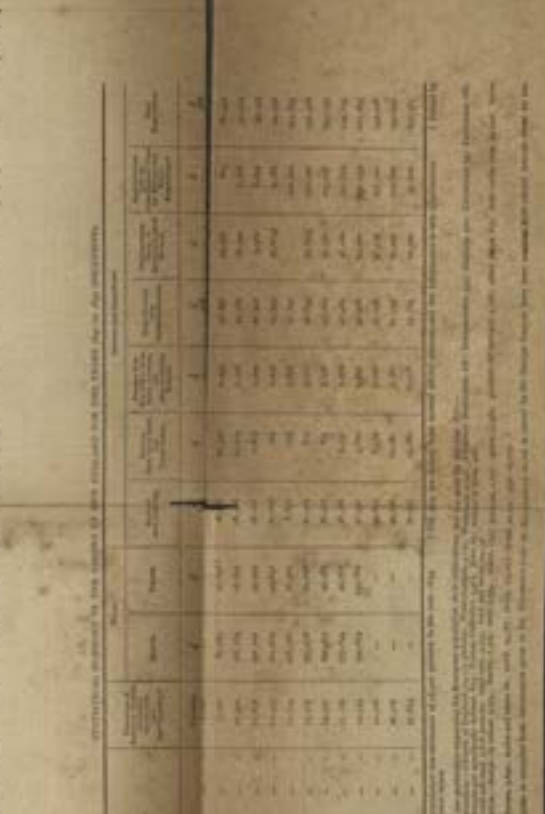
STATISTICAL SUMMARY OF THE COLONY OF NEW ZEALAND FROM 1853 TO 1895 INCLUSIVE

(For Summary, Years 1840 to 1852, see back.)



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